



Claim Chart for References submitted in Third Information Disclosure Statement for 10/766,488

Claim Chart for Claim 61 of 10/766,488

Ref	Title	Distinction between reference(s) and claim(s)
A1	Re.32,502	A1 through A12 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
A2	USP2,899,669	
A3	USP3,264,601	
A4	USP3,332,860	
A5	USP3,474,380	
A6	USP3,497,866	
A7	USP3,523,269	
A8	USP3,670,290	
A9	USP3,673,545	
A10	USP3,706,869	
A11	USP3,737,729	
A12	USP3,790,923	
A13	USP3,792,284	A13 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
A14	USP3,805,116	A14 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
A15	USP3,809,908	A15 and A16 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
A16	USP3,976,877	

Ref	Title	Distinction between reference(s) and claim(s)
B1	USP3,990,761	B1 through B3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
B2	USP4,047,242	
B3	USP4,156,903	
B4	USP4,161,650	B4 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
B5	USP4,167,303	B5 through B7 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
B6	USP4,176,897	
B7	USP4,217,019	
B8	USP4,217,488	B8 does not disclose, at least, an optical module comprising a laser diode driver to convert serial

		data received from a mother board to a laser diode electric signal for a laser diode.
B9	USP4,226,491	B9 and B10 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
B10	USP4,234,968	
B11	USP4,249,266	B11 through B13 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
B12	USP4,252,402	
B13	USP4,257,124	
B14	USP4,268,756	B14 through B15 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
B15	USP4,273,413	
B16	USP4,276,656	B16 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.

Ref	Title	Distinction between reference(s) and claim(s)
C1	USP4,294,682	C1 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
C2	USP4,295,181	C2 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
C3	USP4,301,543	C3 and C4 do not disclose, at least, an optical module comprising a circuit board to carry thereon a connector,a laser diode driver,a laser diode module and a photo diode module.
C4	USP4,330,870	
C5	USP4,345,808	C5 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
C6	USP4,347,655	C6 does not disclose, at least, an optical module comprising a circuit board to carry thereon a connector,a laser diode driver,a laser diode module and a photo diode module.
C7	USP4,357,606	C7 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
C8	USP4,360,248	C8 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.



C9	USP4,366,565	C9 does not disclose, at least, an optical module comprising a circuit board to carry thereon a connector,a laser diode driver,a laser diode module and a photo diode module.
C10	USP4,369,494	C10 through C15 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
C11	USP4,380,360	
C12	USP4,388,671	
C13	USP4,393,516	
C14	USP4,398,073	
C15	USP4,398,780	
C16	USP4,399,563	C16 does not disclose, at least, an optical module comprising a circuit board to carry thereon a connector,a laser diode driver,a laser diode module and a photo diode module

Ref	Title	Distinction between reference(s) and claim(s)
D1	USP4,408,273	D1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
D2	USP4,422,088	D2 through D4 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
D3	USP4,427,879	
D4	USP4,430,699	
D5	USP4,434,537	D5 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
D6	USP4,437,190	D6 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
D7	USP4,439,006	D7 does not disclose, at least, an optical module comprising a circuit board to carry thereon a connector,a laser diode driver,a laser diode module and a photo diode module.
D8	USP4,446,515	D8 and D9 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
D9	USP4,449,244	
D10	USP4,449,784	D10 through D13 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
D11	USP4,453,903	
D12	USP4,459,658	
D13	USP4,461,537	
D14	USP4,470,154	D14 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode

		electric signal for a laser diode.
D15	USP4,486,059	D15 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
D16	USP4,493,113	D16 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.

Ref	Title	Distinction between reference(s) and claim(s)
E1	USP4,501,021	E1 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
E2	USP4,502,130	E2 through E5 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
E3	USP4,505,035	
E4	USP4,506,937	
E5	USP4,510,553	
E6	USP4,511,207	E6 does not disclose, at least, an optical module comprising a circuit board to carry thereon a connector, a laser diode driver, a laser diode module and a photo diode module.
E7	USP4,514,586	E7 through E14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
E8	USP4,516,204	
E9	USP4,519,670	
E10	USP4,519,672	
E11	USP4,519,673	
E12	USP4,522,463	
E13	USP4,526,438	
E14	USP4,526,986	
E15	USP4,527,286	E15 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
E16	USP4,529,266	E16 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
F1	USP4,530,566	F1 through F3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
F2	USP4,531,810	
F3	USP4,533,208	
F4	USP4,533,209	F4 does not disclose, at least, an optical module

		comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
F5	USP4,534,616	F5 through F8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
F6	USP4,534,617	
F7	USP4,535,233	
F8	USP4,537,468	
F9	USP4,539,476	F9 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
F10	USP4,540,237	F10 through F16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
F11	USP4,540,246	
F12	USP4,541,036	
F13	USP4,541,685	
F14	USP4,542,076	
F15	USP4,544,231	
F16	USP4,544,233	

Ref	Title	Distinction between reference(s) and claim(s)
G1	USP4,544,234	G1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
G2	USP4,545,074	G2 and G3 do not disclose, at least, an optical module comprising a circuit board to carry thereon a connector, a laser diode driver, a laser diode module and a photo diode module
G3	USP4,545,077	
G4	USP4,545,642	G4 through G8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
G5	USP4,545,643	
G6	USP4,545,644	
G7	USP4,545,645	
G8	USP4,548,465	
G9	USP4,548,466	G9 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
G10	USP4,548,467	G10 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
G11	USP4,549,782	G11 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
G12	USP4,549,783	G12 through G14 do not disclose, at least, an

G13	USP4,550,975	optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
G14	USP4,553,811	
G15	USP4,553,813	G15 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
G16	USP4,553,814	G16 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
H1	USP4,556,279	H1 through H10 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
H2	USP4,556,281	
H3	USP4,556,282	
H4	USP4,557,551	
H5	USP4,560,234	
H6	USP4,563,057	
H7	USP4,566,753	
H8	USP4,568,145	
H9	USP4,569,569	
H10	USP4,573,760	
H11	USP4,580,295	H11 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
H12	USP4,580,872	H12 through H16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
H13	USP4,588,256	
H14	USP4,589,728	
H15	USP4,597,631	
H16	USP4,614,836	

Ref	Title	Distinction between reference(s) and claim(s)
I1	USP4,629,270	I1 and I2 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
I2	USP4,634,239	
I3	USP4,641,371	I3 does not disclose, at least, an optical module comprising a circuit board to carry thereon a connector, a laser diode driver, a laser diode module and a photo diode module
I4	USP4,647,148	I4 through I16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical
I5	USP4,652,976	
I6	USP4,663,240	

I7	USP4,663,603	signal.
I8	USP4,678,264	
I9	USP4,679,883	
I10	USP4,695,106	
I11	USP4,697,864	
I12	USP4,708,433	
I13	USP4,715,675	
I14	USP4,720,630	
I15	USP4,722,584	
I16	USP4,736,100	

Ref	Title	Distinction between reference(s) and claim(s)
J1	USP4,756,593	J1 through J15 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
J2	USP4,762,388	
J3	USP4,767,179	
J4	USP4,772,931	
J5	USP4,779,952	
J6	USP4,789,218	
J7	USP4,798,430	
J8	USP4,798,440	
J9	USP4,807,006	
J10	USP4,807,955	
J11	USP4,808,115	
J12	USP4,811,165	
J13	USP4,812,133	
J14	USP4,821,145	
J15	USP4,823,235	
J16	USP4,838,630	J16 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.

Ref	Title	Distinction between reference(s) and claim(s)
K1	USP4,840,451	K1 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
K2	USP4,844,581	K2 does not disclose, at least, an optical module comprising a circuit board to carry thereon a connector,a laser diode driver,a laser diode module and a photo diode module.
K3	USP4,847,711	K3 through K9 do not disclose, at least, an optical module comprising a laser diode module to convert
K4	USP4,847,771	

K5	USP4,849,944	a laser diode electric signal to a laser diode optical signal.
K6	USP4,857,002	
K7	USP4,862,327	
K8	USP4,872,212	
K9	USP4,872,736	
K10	USP4,881,789	K10 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
K11	USP4,884,336	K11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
K12	USP4,897,711	K12 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
K13	USP4,906,197	K13 through K16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
K14	USP4,927,225	
K15	USP4,944,568	
K16	USP4,945,448	

Ref	Title	Distinction between reference(s) and claim(s)
L1	USP4,953,929	L1 through L4 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
L2	USP4,955,817	
L3	USP4,963,104	
L4	USP4,967,312	
L5	USP4,977,329	L5 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
L6	USP4,979,793	L6 and L7 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
L7	USP4,979,794	
L8	USP4,986,625	L8 and L9 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
L9	USP4,989,934	
L10	USP4,990,104	L10 through L16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
L11	USP4,991,062	
L12	USP5,002,495	
L13	USP5,004,434	
L14	USP5,006,286	
L15	USP5,011,425	

L16	USP5,029,254	
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Ref	Title	Distinction between reference(s) and claim(s)
M1	USP5,035,482	M1 through M4 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
M2	USP5,035,641	
M3	USP5,040,993	
M4	USP5,041,025	
M5	USP5,043,775	M5 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
M6	USP5,044,982	M6 through M14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
M7	USP5,045,635	
M8	USP5,045,971	
M9	USP5,046,955	
M10	USP5,060,373	
M11	USP5,071,219	
M12	USP5,076,656	
M13	USP5,076,688	
M14	USP5,082,344	
M15	USP5,084,802	M15 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
M16	USP5,086,422	M16 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
N1	USP5,091,991	N1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
N2	USP5,093,879	N2 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
N3	USP5,094,623	N3 through N8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
N4	USP5,101,463	
N5	USP5,104,243	
N6	USP5,107,404	
N7	USP5,108,294	
N8	USP5,109,453	
N9	USP5,113,467	N9 does not disclose, at least, an optical module

		comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
N10	USP5,116,239	N10 through N14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
N11	USP5,117,476	
N12	USP5,118,362	
N13	USP5,118,904	
N14	USP5,120,578	
N15	USP5,122,893	N15 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
N16	USP5,124,885	N16 and N17 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
N17	USP5,125,849	
N18	USP5,127,071	N18 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
N19	USP5,132,871	N19 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
O1	USP5,134,677	O1 through O3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
O2	USP5,134,679	
O3	USP5,136,063	
O4	USP5,136,152	O4 and O5 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
O5	USP5,136,603	
O6	USP5,138,537	O6 through O8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
O7	USP5,138,678	
O8	USP5,140,663	
O9	USP5,155,786	O9 and O10 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
O10	USP5,157,769	
O11	USP5,167,139	O11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
O12	USP5,168,537	O12 does not disclose, at least, an optical module



		comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
O13	USP5,170,146	O13 through O17 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
O14	USP5,171,167	
O15	USP5,173,059	
O16	USP5,183,404	
O17	USP5,183,405	

Ref	Title	Distinction between reference(s) and claim(s)
P1	USP5,195,911	P1 through P4 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
P2	USP5,202,536	
P3	USP5,207,597	
P4	USP5,212,752	
P5	USP5,212,754	P5 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
P6	USP5,218,519	P6 through P11 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
P7	USP5,225,760	
P8	USP5,233,676	
P9	USP5,233,674	
P10	USP5,234,353	
P11	USP5,238,426	
P12	USP5,241,614	P12 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
P13	USP5,247,532	P13 does not disclose, at least, an optical module comprising a circuit board to carry thereon a connector, a laser diode driver, a laser diode module and a photo diode module.
P14	USP5,259,052	P14 through P16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
P15	USP5,259,054	
P16	USP5,262,923	
P17	USP5,271,079	P17 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.

Ref	Title	Distinction between reference(s) and claim(s)
Q1	USP5,274,729	Q1 does not disclose, at least, an optical module

		comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
Q2	USP5,285,466	Q2 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
Q3	USP5,285,511	Q3 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
Q4	USP5,285,512	Q4 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
Q5	USP5,286,207	Q5 through Q16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
Q6	USP5,286,247	
Q7	USP5,288,247	
Q8	USP5,289,347	
Q9	USP5,296,813	
Q10	USP5,299,089	
Q11	USP5,304,069	
Q12	USP5,305,182	
Q13	USP5,311,408	
Q14	USP5,315,679	
Q15	USP5,317,663	
Q16	USP5,321,819	

Ref	Title	Distinction between reference(s) and claim(s)
R1	USP5,329,604	R1 through R3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
R2	USP5,333,221	
R3	USP5,333,225	
R4	USP5,337,391	R4 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
R5	USP5,337,396	R5 and R6 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
R6	USP5,340,340	
R7	USP5,345,524	R7 and R8 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
R8	USP5,345,530	
R9	USP5,353,364	R9 does not disclose, at least, an optical module comprising a circuit board to carry thereon a

		connector, a laser diode driver, a laser diode module and a photo diode module.
R10	USP5,353,634	R10 through R12 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
R11	USP5,356,300	
R12	USP5,357,402	
R13	USP5,361,244	R13 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
R14	USP5,361,318	R14 through R16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
R15	USP5,366,664	
R16	USP5,372,515	

Ref	Title	Distinction between reference(s) and claim(s)
S1	USP5,375,040	S1 through S9 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
S2	USP5,383,793	
S3	USP5,388,995	
S4	USP5,390,268	
S5	USP5,393,249	
S6	USP5,397,242	
S7	USP5,398,154	
S8	USP5,398,295	
S9	USP5,408,384	
S10	USP5,414,787	S10 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
S11	USP5,416,668	S11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
S12	USP5,416,870	S12 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
S13	USP5,416,872	S13 through S16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
S14	USP5,419,717	
S15	USP5,424,573	
S16	USP5,428,703	

Ref	Title	Distinction between reference(s) and claim(s)
T1	USP5,428,704	T1 does not disclose, at least, an optical module comprising a laser diode driver to convert serial

		data received from a mother board to a laser diode electric signal for a laser diode.
T2	USP5,434,747	T2 and T3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
T3	USP5,443,390	
T4	USP5,446,814	T4 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
T5	USP5,452,387	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T6	USP5,454,080	T6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
T7	USP5,455,703	T7 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
T8	USP5,463,532	T8 and T9 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
T9	USP5,469,332	
T10	USP5,470,257	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T11	USP5,470,259	
T12	USP5,475,734	T12 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
T13	USP5,477,418	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T14	USP5,478,253	
T15	USP5,478,259	T15 and T16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
T16	USP5,478,260	

Ref	Title	Distinction between reference(s) and claim(s)
U1	USP5,481,634	U1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.

U2	USP5,482,658	U2 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
U3	USP5,487,678	U3 and U4 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
U4	USP5,491,613	
U5	USP5,491,712	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U6	USP5,494,747	U6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
U7	USP5,499,311	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U8	USP5,499,312	U8 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
U9	USP5,504,657	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U10	USP5,506,921	U10 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
U11	USP5,506,922	U11 through U15 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
U12	USP5,507,668	
U13	USP5,526,235	
U14	USP5,527,991	
U15	USP5,534,662	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U16	USP5,535,296	

Ref	Title	Distinction between reference(s) and claim(s)
V1	USP5,535,364	V1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
V2	USP5,545,845	These references do not qualify as prior art.

V3	USP5,546,281	Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V4	USP5,547,385	
V5	USP5,548,641	V5 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
V6	USP5,548,677	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V7	USP5,554,031	V7 through V9 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
V8	USP5,554,037	
V9	USP5,567,167	
V10	USP5,577,064	V10 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
V11	USP5,580,269	V11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
V12	USP5,588,850	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V13	USP5,598,319	V13 and V14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
V14	USP5,599,595	
V15	USP5,600,470	V15 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
V16	USP5,613,860	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
W1	USP5,629,919	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
W2	USP5,631,998	
W3	USP5,653,596	
W4	USP5,659,459	W4 does not disclose, at least, an optical module comprising a laser diode module to convert a laser

		diode electric signal to a laser diode optical signal.
W5	USP5,675,428	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
W6	USP5,687,267	
W7	USP5,717,533	
W8	USP5,724,729	
W9	USP5,726,864	
W10	USP5,734,558	
W11	USP5,736,782	
W12	USP5,747,735	
W13	USP5,767,999	
W14	USP5,779,504	
W15	USP5,797,771	
W16	USP5,836,774	

Ref	Title	Distinction between reference(s) and claim(s)
X1	USP5,864,468	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
X2	USP5,879,173	
X3	DE.4239124 A1	X3 through X6 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
X4	EP 0 232792 A1	
X5	EP.0 228 278	
X6	EP.0 305112 A2	
X7	EP.0 314 651 A2	X7 and X8 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
X8	EP.0 413 489 A2	
X9	EP.0 437 161 A2	X9 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
X10	EP.0 456 298 B1	X10 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
X11	EP.0 530 791 A2	X11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
X12	EP.0 535 473 A1	X12 through X14 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
X13	EP.0 588 014 A2	
X14	EP.0 600 645 A1	
X15	EP.0 613 032 A2	X15 does not disclose, at least, an optical module comprising a circuit board to carry thereon a connector,a laser diode driver,a laser diode module

		and a photo diode module.
X16	EP.0 652 696 A1	X16 through X18 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
X17	EP.0 656 696 A1	
X18	EP.0 662 259 B1	
X19	EP.442 608 A2	X19 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
X20	WO 94/12900	X20 and X21 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
X21	JP.1-237783	

Ref	Title	Distinction between reference(s) and claim(s)
Y1	JP.2-151084	Y1 through Y4 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
Y2	JP.2-181710	
Y3	JP.2-278212	
Y4	JP.2-87837	
Y5	JP.3-20458	Y5 through Y7 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
Y6	JP.3-94869	
Y7	JP.4-109593	
Y8	JP.4-122905	Y8 through Y10 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
Y9	JP.4-165312	
Y10	JP.4-211208	
Y11	JP.4-221207	Y11 through Y13 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
Y12	JP.4-229962	
Y13	JP.4-230978	
Y14	JP.4-234715	Y14 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
Y15	JP.4-270305	Y15 through Y18 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
Y16	JP.4-50901	
Y17	JP.4-87809	
Y18	JP.5-052802	
Y19	JP.5-134147	Y19 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.



Ref	Title	Distinction between reference(s) and claim(s)
Z1	JP.5-152607	Z1 and Z2 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
Z2	JP.5-188250	
Z3	JP.5-211379	Z3 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
Z4	JP.5-218581	Z4 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
Z5	JP.5-290913	Z5 through Z8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
Z6	JP.5-70955	
Z7	JP.61-158046	
Z8	JP.61-188385	
Z9	JP.63-009325	Z9 does not disclose, at least, an optical module comprising a circuit board to carry thereon a connector, a laser diode driver, a laser diode module and a photo diode module
Z10	JP.63-16496	Z10 through Z13 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
Z11	JP.63-65967	
Z12	JP.63-65978	
Z13	JP.63-82998	
Z14	U-3-20458	Z14 through Z19 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
Z15	U-3-94869	
Z16	U-4-87809	
Z17	U-5-052802	
Z18	U-5-70955	
Z19	U-61-158046	

Ref	Title	Distinction between reference(s) and claim(s)
AA1	U-61-188385	AA1 through AA5 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
AA2	U-63-16496	
AA3	U-63-65967	
AA4	U-63-65978	
AA5	U-63-82998	

Ref	Title	Distinction between reference(s) and claim(s)
BB1	AT&T Microelectronics, "1408-Type ODL Transceiver" Feb. 1994 preliminary data sheet. p.2-10	BB1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.

BB2	Ronald L.Soderstrom et al., "An optical Data Link using a CD laser", SPIE Vol.1577 High Speed Fiber Networks and Channels, pp.163-173, 1991	BB2 through BB4 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
BB3	BCP, Inc. "Gigabits Over Multimode Optical Fiber" no date	
BB4	Ronald L.Soderstrom et al., "CD laser optical Data Links for Workstation and Midrange Computers", IEEE p.505-509, 1993.	
BB5	FDDI Low-Cost Fiber Physical Layer Medium Dependent (LCF-PMD) Common Receiver Footprint, no date.	BB5 does not disclose, at least, an optical module comprising a circuit board to carry thereon a connector, a laser diode driver, a laser diode module and a photo diode module
BB6	HP Module HFBR-5103, FDDI Data Sheet, <a href="http://www.hp.com/HP-COMP/fiber/hfbr5103.html">http://www.hp.com/HP-COMP/fiber/hfbr5103.html</a> , Jun. 11, 1998	BB6 and BB7 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
BB7	IBM Technical Disclosure Bulletin "Optical Link Card Guide/Retention System". <a href="http://www.patents.ibm.com/tlbs/tdb?&amp;order=93A+60964">www.patents.ibm.com/tlbs/tdb?&amp;order=93A+60964</a> , April 1993	
BB8	IBM, "A Proposal for a New High Performance... "OptoElectronics Enterprise Oct. 1992 ANSI Meeting, Oct. 13, 1992	BB8 and BB9 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
BB9	IBM, et al, "GLM Family", FCSI-301-Ren Sun, GLM, ,,,,,, FCSI-301-Rev1.0, Feb. 16, 1994.	
BB10	Methode Electronics, Inc., "DM 1063-DBLM9 Copper Gigabit Link Module" data sheet. (no date)	BB10 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
BB11	"Raylan Joins Low-Wavelength Push -850 nm Transceiver", Electronic Engineering Times, Aug. 1993.	BB11 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.

Ref	Title	Distinction between reference(s) and claim(s)
CC1	Sumitomo Electric Fiber Optics Corp. "Transceiver Manufacturers to Support Common Footprint for Desktop FDDI Applications," June 23, 1992.	CC1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
CC2	Sun Microsystems computer Co. et al., Gigabit Interface Converter (GBIC), Rev 4.4, Dec. 1, 1997	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
CC3	Siemens, "Who provides Low-Cost Transceivers for all Standards?" no date.	CC3 through CC5 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
CC4	AMP "PC Board Connectors", Product Guide 82759, pp. 7104-7108, Catalog E2750 issued Jun. 1991	
CC5	AMP Inc. "Lytel Molded-Optronic SC Duplex Transceiver" Catalog 65922, Dec. 1993.	
CC6	AMPHENOL Engineering News vol. 7 No. 6., pp241, 264-65, Nov. 1994	CC6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
CC7	Baldwin and Kellerman, "Fiber Optic Module Interface Attachment" Research disclosure, Kenneth Mason Publications Ltd., England, Apr. 1991.	CC7 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.

CC8	Block and Gaio "Optical Link Card guide/Retention Sys" RESEARCH DISCLOSURE Kenneth Mason Publications Ltd.,England,Apr. 1993.	CC8 and CC9 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
CC9	Cinch Hinge Connectors Catalog CM-16, Jul. 1963.	
CC10	Martin H. Weik,"Communication Standard Dictionary"p.454.definition of LED,Van Nostrand Reinhold Co.	CC10 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
CC11	Edward R.Salmon,Encapsulation of Electronic Devices and Components,Marcel Dekker Inc.,New York,1987	CC11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
DD1	Dieter Gwinner,Conductive Coatings:Vacuum Evaporated Aluminum for Selective Shielding of Plastic Housings,no date.	DD1 through DD3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
DD2	HEADS Up--Sumitomo Electric Lightwave joins Other in Announcement,May 11,1995	
DD3	Robert C. Herron,High Density Input/Output Connector Systems,3M Electronic Products Divisions,1990	
DD4	Shortwave Opto Assembly,IBM OptoElectronic Enterprises; IBM/OEE Market Survey Only, Rev. 1,Jan.6,1993	DD4 and DD5 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
DD5	"Minimizing Electrostatic Discharge Damage to a Cartridge",IBM Technical Disclosure Bulletin, vol. 29 No. 10. Mar.,1987	
DD6	Japanese Standards Association " F04 Type Connectors for Optical Fiber Cords JIS C 5973"Japanese Standards Association,1990.	DD6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
DD7	Ronald L.Soderstrom et al.,A Miniaturized Fiber Optic Laser Receptacle Using a Compact Disk(CD)---FOC/LAN'87&MFOC-WEST,pp.383-385,no date.	DD7 through DD9 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board to a laser diode electric signal for a laser diode.
DD8	"Transceiver Module Assembly", IBM Technical Disclosure Bulletin,Oct.1979,https://www.delphion.com/tbds/tdb?o=79A+06370,last visited Mar.3,2005.	
DD9	Ronald L.Soderstrom et al.,Optical Components and Electronic Packaging for High Performance Optical Data Links,THE RESEARCH INVESTMENT,p.19-28(no date).	
DD10	Thomas & Betts INFO-LAN Modem 1998	DD10 does not disclose, at least, an optical module comprising a circuit board to carry thereon a connector,a laser diode driver,a laser diode module and a photo diode module
DD11	"Active component manufacturers lower the cost of fiber to the desktop",Lightwave,Feb.1994 pp.58,67.	DD11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
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EE1	Fibre Distributed Date Interface(FDDI)-Token Ring Low-Cost Fibre Physical Layer Medium Dependent (LCF-PMD),American National Standards Institute,1996.	EE1 through EE11 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electric signal to a laser diode optical signal.
EE2	Communications Standard Dictionary; p.454,definition of inhomogeneous fiber,Van Nostrand Reinhold Publishing,1983	
EE3	"Transmitter/receiver assembly simplifies use of fibre optics", Design Engineering,p.19,Button Press,Ltd.,April 1980.	
EE4	Ronald L.Soderstrom et al., "CD laser as a fiber optic source for computer date links",Fiber Optic Datacom and Computer Networks,SPIE-The International Society for Optical Engineerdings,Vol.1577,pp.174-181,1988	
EE5	David A.Knodel et al., "Open Fibre Control,a laser safety interlock technique",High-Speed Fiber Networks and Channels,SPIE-The International Society for Optical Engineering Proceedings,Vol.991,pp.179-182,1992	
EE6	"IBM Technical Disclosure Bulletin, Electrostatic Dissipative Enclosed Connector", Vol.34,No.7B,Dec.1991	
EE7	"High Reliability SW Laser For Optical Data Links", LEOS '93 Conference Proceedings, IEEE Lasers and Electro-Optics Society 1993 Annual Meeting;	
EE8	Minimizing Electrostatic Discharge to a Cartridge,IBM Technical Disclosure Bulletin,March 1987, <a href="https://www.delphion.com/tdb?o=87A%2060509">https://www.delphion.com/tdb?o=87A%2060509</a> ,last visited Mar.8,2005.	
EE9	K.P.Jackson et al., "High-Density,Array,Optical Interconnects for Multi-Chip Module Conference MCMC-92 Proceedings,IEEE Computer Society Press.	
EE10	TDB:Stackable Circuit Card Packaging within a Logic Cage,IBM Technical Disclosure Bulletin,Dec.1992, <a href="https://www.delphion.com/tbds/tdb?o=92A%2063485">https://www.delphion.com/tbds/tdb?o=92A%2063485</a> ,last visited Mar.8,2005	
EE11	Jeff Hechi,The Laser Guidebook,2nd ed.,McGraw Hill,Inc.,1992	

Claim Chart for Claim 62-65 of 10/766,488

Ref	Title	Distinction between reference(s) and claim(s)
A1	Re.32,502	A1 through A12 do not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
A2	USP2,899,669	
A3	USP3,264,601	
A4	USP3,332,860	
A5	USP3,474,380	
A6	USP3,497,866	
A7	USP3,523,269	
A8	USP3,670,290	
A9	USP3,673,545	
A10	USP3,706,869	
A11	USP3,737,729	
A12	USP3,790,923	
A13	USP3,792,284	A13 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
A14	USP3,805,116	A14 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
A15	USP3,809,908	A15 and A16 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
A16	USP3,976,877	

Ref	Title	Distinction between reference(s) and claim(s)
B1	USP3,990,761	B1 through B3 do not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
B2	USP4,047,242	
B3	USP4,156,903	
B4	USP4,161,650	B4 does not disclose, at least, an optical module comprising a laser diode driver to convert serial

		data received from a mother board through a connector to a laser diode electric signal for a laser diode.
B5	USP4,167,303	B5 through B7 do not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
B6	USP4,176,897	
B7	USP4,217,019	
B8	USP4,217,488	B8 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
B9	USP4,226,491	B9 and B10 do not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
B10	USP4,234,968	
B11	USP4,249,266	B11 through B13 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
B12	USP4,252,402	
B13	USP4,257,124	
B14	USP4,268,756	B14 and B15 do not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
B15	USP4,273,413	
B16	USP4,276,656	B16 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.

Ref	Title	Distinction between reference(s) and claim(s)
C1	USP4,294,682	C1 does not disclose, at least, an optical module

		comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
C2	USP4,295,181	C2 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
C3	USP4,301,543	C3 and C4 do not disclose, at least, an optical module comprising a circuit board to carry thereon a connector,a laser diode driver,a laser diode module,a photo diode module and a semiconductor integrated circuit.
C4	USP4,330,870	
C5	USP4,345,808	C5 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
C6	USP4,347,655	C6 does not disclose, at least, an optical module comprising a circuit board to carry thereon a connector,a laser diode driver,a laser diode module,a photo diode module and a semiconductor integrated circuit.
C7	USP4,357,606	C7 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
C8	USP4,360,248	C8 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
C9	USP4,366,565	C9 does not disclose, at least, an optical module comprising a circuit board to carry thereon a connector,a laser diode driver,a laser diode

		module,a photo diode module and a semiconductor integrated circuit.
C10	USP4,369,494	C10 through C15 do not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
C11	USP4,380,360	
C12	USP4,388,671	
C13	USP4,393,516	
C14	USP4,398,073	
C15	USP4,398,780	
C16	USP4,399,563	C16 does not disclose, at least, an optical module comprising a circuit board to carry thereon a connector,a laser diode driver,a laser diode module,a photo diode module and a semiconductor integrated circuit.

Ref	Title	Distinction between reference(s) and claim(s)
D1	USP4,408,273	D1 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
D2	USP4,422,088	D2 through D4 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
D3	USP4,427,879	
D4	USP4,430,699	
D5	USP4,434,537	D5 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
D6	USP4,437,190	D6 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
D7	USP4,439,006	D7 does not disclose, at least, an optical module comprising a circuit board to carry thereon a



		connector,a laser diode driver,a laser diode module,a photo diode module and a semiconductor integrated circuit.
D8	USP4,446,515	D8 and D9 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
D9	USP4,449,244	
D10	USP4,449,784	D10 through D13 do not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
D11	USP4,453,903	
D12	USP4,459,658	
D13	USP4,461,537	
D14	USP4,470,154	D14 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
D15	USP4,486,059	D15 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
D16	USP4,493,113	D16 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.

Ref	Title	Distinction between reference(s) and claim(s)
E1	USP4,501,021	E1 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
E2	USP4,502,130	E2 through E5 do not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode
E3	USP4,505,035	
E4	USP4,506,937	

E5	USP4,510,553	electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
E6	USP4,511,207	E6 does not disclose, at least, an optical module comprising a circuit board to carry thereon a connector,a laser diode driver,a laser diode module,a photo diode module and a semiconductor integrated circuit.
E7	USP4,514,586	E7 through E14 do not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
E8	USP4,516,204	
E9	USP4,519,670	
E10	USP4,519,672	
E11	USP4,519,673	
E12	USP4,522,463	
E13	USP4,526,438	
E14	USP4,526,986	
E15	USP4,527,286	E15 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
E16	USP4,529,266	E16 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
F1	USP4,530,566	F1 through F3 do not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
F2	USP4,531,810	
F3	USP4,533,208	
F4	USP4,533,209	F4 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser

		diode.
F5	USP4,534,616	F5 through F8 do not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
F6	USP45,34,617	
F7	USP4,535,233	
F8	USP4,537,468	
F9	USP4,539,476	F9 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
F10	USP4,540,237	F10 through F16 do not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
F11	USP4,540,246	
F12	USP4,541,036	
F13	USP4,541,685	
F14	USP4,542,076	
F15	USP4,544,231	
F16	USP4,544,233	

Ref	Title	Distinction between reference(s) and claim(s)
G1	USP4,544,234	G1 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
G2	USP4,545,074	G2 and G3 do not disclose, at least, an optical module comprising a circuit board to carry thereon a connector,a laser diode driver,a laser diode module,a photo diode module and a semiconductor integrated circuit.
G3	USP4,545,077	
G4	USP4,545,642	G4 through G8 do not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
G5	USP4,545,643	
G6	USP4,545,644	
G7	USP4,545,645	
G8	USP4,548,465	

G9	USP4,548,466	G9 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
G10	USP4,548,467	G10 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
G11	USP4,549,782	G11 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
G12	USP4,549,783	G12 through G14 do not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
G13	USP4,550,975	
G14	USP4,553,811	
G15	USP4,553,813	G15 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
G16	USP4,553,814	G16 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
H1	USP4,556,279	H1 through H10 do not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said
H2	USP4,556,281	
H3	USP4,556,282	
H4	USP4,557,551	

H5	USP4,560,234	laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbts/s or more.
H6	USP4,563,057	
H7	USP4,566,753	
H8	USP4,568,145	
H9	USP4,569,569	
H10	USP4,573,760	
H11	USP4,580,295	H11 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
H12	USP4,580,872	H12 through H16 do not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbts/s or more.
H13	USP4,588,256	
H14	USP4,589,728	
H15	USP4,597,631	
H16	USP4,614,836	

Ref	Title	Distinction between reference(s) and claim(s)
I1	USP4,629,270	I1 and I2 do not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbts/s or more.
I2	USP4,634,239	
I3	USP4,641,371	I3 does not disclose, at least, an optical module comprising a circuit board to carry thereon a connector,a laser diode driver,a laser diode module,a photo diode module and a semiconductor integrated circuit.
I4	USP4,647,148	I4 through I16 do not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbts/s or more.
I5	USP4,652,976	
I6	USP4,663,240	
I7	USP4,663,603	
I8	USP4,678,264	
I9	USP4,679,883	
I10	USP4,695,106	
I11	USP4,697,864	
I12	USP4,708,433	
I13	USP4,715,675	
I14	USP4,720,630	

I15	USP4,722,584	
I16	USP4,736,100	

Ref	Title	Distinction between reference(s) and claim(s)
J1	USP4,756,593	J1 through J15 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
J2	USP4,762,388	
J3	USP4,767,179	
J4	USP4,772,931	
J5	USP4,779,952	
J6	USP4,789,218	
J7	USP4,798,430	
J8	USP4,798,440	
J9	USP4,807,006	
J10	USP4,807,955	
J11	USP4,808,115	
J12	USP4,811,165	
J13	USP4,812,133	
J14	USP4,821,145	
J15	USP4,823,235	
J16	USP4,838,630	J16 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.

Ref	Title	Distinction between reference(s) and claim(s)
K1	USP4,840,451	K1 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
K2	USP4,844,581	K2 does not disclose, at least, an optical module comprising a circuit board to carry thereon a connector, a laser diode driver, a laser diode module, a photo diode module and a semiconductor integrated circuit.
K3	USP4,847,711	K3 through K9 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
K4	USP4,847,771	
K5	USP4,849,944	
K6	USP4,857,002	
K7	USP4,862,327	
K8	USP4,872,212	
K9	USP4,872,736	

K10	USP4,881,789	K10 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
K11	USP4,884,336	K11 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
K12	USP4,897,711	K12 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
K13	USP4,906,197	K13 through K16 not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
K14	USP4,927,225	
K15	USP4,944,568	
K16	USP4,945,448	

Ref	Title	Distinction between reference(s) and claim(s)
L1	USP4,953,929	L1 through L4 do not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
L2	USP4,955,817	
L3	USP4,963,104	
L4	USP4,967,312	
L5	USP4,977,329	L5 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
L6	USP4,979,793	L6 and L7 do not disclose, at least, an

L7	USP4,979,794	optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
L8	USP4,986,625	L8 and L9 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
L9	USP4,989,934	
L10	USP4,990,104	L10 through L16 do not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
L11	USP4,991,062	
L12	USP5,002,495	
L13	USP5,004,434	
L14	USP5,006,286	
L15	USP5,011,425	
L16	USP5,029,254	

Ref	Title	Distinction between reference(s) and claim(s)
M1	USP5,035,482	M1 through M4 do not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
M2	USP5,035,641	
M3	USP5,040,993	
M4	USP5,041,025	
M5	USP5,043,775	M5 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
M6	USP5,044,982	M6 through M14 do not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
M7	USP5,045,635	
M8	USP5,045,971	
M9	USP5,046,955	
M10	USP5,060,373	
M11	USP5,071,219	
M12	USP5,076,656	
M13	USP5,076,688	
M14	USP5,082,344	
M15	USP5,084,802	M15 does not disclose, at least, an optical module



		comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
M16	USP5,086,422	M16 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
N1	USP5,091,991	N1 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
N2	USP5,093,879	N2 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
N3	USP5,094,623	N3 through N8 do not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
N4	USP5,101,463	
N5	USP5,104,243	
N6	USP5,107,404	
N7	USP5,108,294	
N8	USP5,109,453	
N9	USP5,113,467	N9 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
N10	USP5,116,239	N10 through N14 not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said
N11	USP5,117,476	
N12	USP5,118,362	
N13	USP5,118,904	

N14	USP5,120,578	laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
N15	USP5,122,893	N15 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
N16	USP5,124,885	N16 and N17 do not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
N17	USP5,125,849	
N18	USP5,127,071	N18 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
N19	USP5,132,871	N19 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
O1	USP5,134,677	O1 through O3 do not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
O2	USP5,134,679	
O3	USP5,136,063	
O4	USP5,136,152	O4 and O5 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
O5	USP5,136,603	

O6	USP5,138,537	O6 through O8 do not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
O7	USP5,138,678	
O8	USP5,140,663	
O9	USP5,155,786	O9 and O10 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
O10	USP5,157,769	
O11	USP5,167,139	O11 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
O12	USP5,168,537	O12 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
O13	USP5,170,146	O13 through O17 do not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
O14	USP5,171,167	
O15	USP5,173,059	
O16	USP5,183,404	
O17	USP5,183,405	

Ref	Title	Distinction between reference(s) and claim(s)
P1	USP5,195,911	P1 through P4 do not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
P2	USP5,202,536	
P3	USP5,207,597	
P4	USP5,212,752	
P5	USP5,212,754	P5 does not disclose, at least, an optical module

		comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
P6	USP5,218,519	P6 through P11 do not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
P7	USP5,225,760	
P8	USP5,233,676	
P9	USP5,233,674	
P10	USP5,234,353	
P11	USP5,238,426	
P12	USP5,241,614	P12 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
P13	USP5,247,532	P13 does not disclose, at least, an optical module comprising a circuit board to carry thereon a connector,a laser diode driver,a laser diode module,a photo diode module and a semiconductor integrated circuit.
P14	USP5,259,052	P14 through P16 do not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
P15	USP5,259,054	
P16	USP5,262,923	
P17	USP5,271,079	P17 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.

Ref	Title	Distinction between reference(s) and claim(s)
Q1	USP5,274,729	Q1 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.

Q2	USP5,285,466	Q2 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
Q3	USP5,285,511	Q3 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
Q4	USP5,285,512	Q4 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
Q5	USP5,286,207	Q5 through Q16 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
Q6	USP5,286,247	
Q7	USP5,288,247	
Q8	USP5,289,347	
Q9	USP5,296,813	
Q10	USP5,299,089	
Q11	USP5,304,069	
Q12	USP5,305,182	
Q13	USP5,311,408	
Q14	USP5,315,679	
Q15	USP5,317,663	
Q16	USP5,321,819	

Ref	Title	Distinction between reference(s) and claim(s)
R1	USP5,329,604	R1 through R3 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
R2	USP5,333,221	
R3	USP5,333,225	
R4	USP5,337,391	R4 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.

R5	USP5,337,396	R5 and R6 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
R6	USP5,340,340	
R7	USP5,345,524	R7 and R8 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
R8	USP5,345,530	
R9	USP5,353,364	R9 does not disclose, at least, an optical module comprising a circuit board to carry thereon a connector, a laser diode driver, a laser diode module, a photo diode module and a semiconductor integrated circuit.
R10	USP5,353,634	R10 through R12 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
R11	USP5,356,300	
R12	USP5,357,402	
R13	USP5,361,244	R13 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
R14	USP5,361,318	R14 through R16 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
R15	USP5,366,664	
R16	USP5,372,515	

Ref	Title	Distinction between reference(s) and claim(s)
S1	USP5,375,040	S1 through S9 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said
S2	USP5,383,793	
S3	USP5,388,995	
S4	USP5,390,268	

S5	USP5,393,249	laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
S6	USP5,397,242	
S7	USP5,398,154	
S8	USP5,398,295	
S9	USP5,408,384	
S10	USP5,414,787	S10 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
S11	USP5,416,668	S11 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
S12	USP5,416,870	S12 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
S13	USP5,416,872	S13 through S16 do not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
S14	USP5,419,717	
S15	USP5,424,573	
S16	USP5,428,703	

Ref	Title	Distinction between reference(s) and claim(s)
T1	USP5,428,704	T1 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
T2	USP5,434,747	T2 and T3 do not disclose, at least, an

T3	USP5,443,390	optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
T4	USP5,446,814	T4 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
T5	USP5,452,387	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T6	USP5,454,080	T6 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
T7	USP5,455,703	T7 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
T8	USP5,463,532	T8 and T9 do not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
T9	USP5,469,332	
T10	USP5,470,257	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T11	USP5,470,259	
T12	USP5,475,734	T12 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber



		connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
T13	USP5,477,418	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T14	USP5,478,253	
T15	USP5,478,259	T15 and T16 do not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
T16	USP5,478,260	

Ref	Title	Distinction between reference(s) and claim(s)
U1	USP5,481,634	U1 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
U2	USP5,482,658	U2 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
U3	USP5,487,678	U3 and U4 do not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
U4	USP5,491,613	
U5	USP5,491,712	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U6	USP5,494,747	U6 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a

		laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
U7	USP5,499,311	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U8	USP5,499,312	U8 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
U9	USP5,504,657	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U10	USP5,506,921	U10 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
U11	USP5,506,922	U11 through U14 do not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
U12	USP5,507,668	
U13	USP5,526,235	
U14	USP5,527,991	
U15	USP5,534,662	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U16	USP5,535,296	

Ref	Title	Distinction between reference(s) and claim(s)
V1	USP5,535,364	V1 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.

V2	USP5,545,845	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V3	USP5,546,281	
V4	USP5,547,385	
V5	USP5,548,641	V5 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
V6	USP5,548,677	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V7	USP5,554,031	V7 through V9 do not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
V8	USP5,554,037	
V9	USP5,567,167	
V10	USP5,577,064	V10 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
V11	USP5,580,269	V11 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
V12	USP5,588,850	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V13	USP5,598,319	V13 and V14 do not disclose, at least, an

V14	USP5,599,595	optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
V15	USP5,600,470	V15 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
V16	USP5,613,860	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
W1	USP5,629,919	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
W2	USP5,631,998	
W3	USP5,653,596	
W4	USP5,659,459	W4 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
W5	USP5,675,428	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
W6	USP5,687,267	
W7	USP5,717,533	
W8	USP5,724,729	
W9	USP5,726,864	
W10	USP5,734,558	
W11	USP5,736,782	
W12	USP5,747,735	
W13	USP5,767,999	
W14	USP5,779,504	
W15	USP5,797,771	
W16	USP5,836,774	

Ref	Title	Distinction between reference(s) and claim(s)
X1	USP5,864,468	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
X2	USP5,879,173	
X3	DE.4239124 A1	X3 through X6 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
X4	EP 0 232792 A1	
X5	EP.0 228 278	
X6	EP.0 305112 A2	
X7	EP.0 314 651 A2	X7 and X8 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
X8	EP.0 413 489 A2	
X9	EP.0 437 161 A2	X9 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
X10	EP.0 456 298 B1	X10 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
X11	EP.0 530 791 A2	X11 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
X12	EP.0 535 473 A1	X12 through X14 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
X13	EP.0 588 014 A2	
X14	EP.0 600 645 A1	
X15	EP.0 613 032 A2	X15 does not disclose, at least, an optical module

		comprising a circuit board to carry thereon a connector,a laser diode driver,a laser diode module,a photo diode module and a semiconductor integrated circuit.
X16	EP.0 652 696 A1	X16 through X18 do not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
X17	EP.0 656 696 A1	
X18	EP.0 662 259 B1	
X19	EP.442 608 A2	X19 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
X20	WO 94/12900	X20 and X21 do not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
X21	JP.1-237783	

Ref	Title	Distinction between reference(s) and claim(s)
Y1	JP.2-151084	Y1 through Y4 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
Y2	JP.2-181710	
Y3	JP.2-278212	
Y4	JP.2-87837	
Y5	JP.3-20458	Y5 through Y7 do not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
Y6	JP.3-94869	
Y7	JP.4-109593	
Y8	JP.4-122905	Y8 through Y10 do not disclose, at least, an optical module comprising a circuit board to carry thereon a connector,a laser diode driver,a laser diode module,a photo diode module and a semiconductor integrated circuit.
Y9	JP.4-165312	
Y10	JP.4-211208	

Y11	JP.4-221207	Y11 through Y13 do not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
Y12	JP.4-229962	
Y13	JP.4-230978	
Y14	JP.4-234715	Y14 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
Y15	JP.4-270305	Y15 through Y18 do not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
Y16	JP.4-50901	
Y17	JP.4-87809	
Y18	JP.5-052802	
Y19	JP.5-134147	Y19 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.

Ref	Title	Distinction between reference(s) and claim(s)
Z1	JP.5-152607	Z1 and Z2 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
Z2	JP.5-188250	
Z3	JP.5-211379	Z3 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
Z4	JP.5-218581	Z4 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser

		diode.
Z5	JP.5-290913	Z5 through Z8 do not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
Z6	JP.5-70955	
Z7	JP.61-158046	
Z8	JP.61-188385	
Z9	JP.63-009325	Z9 does not disclose, at least, an optical module comprising a circuit board to carry thereon a connector,a laser diode driver,a laser diode module,a photo diode module and a semiconductor integrated circuit.
Z10	JP.63-16496	Z10 through Z19 do not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
Z11	JP.63-65967	
Z12	JP.63-65978	
Z13	JP.63-82998	
Z14	U-3-20458	
Z15	U-3-94869	
Z16	U-4-87809	
Z17	U-5-052802	
Z18	U-5-70955	
Z19	U-61-158046	

Ref	Title	Distinction between reference(s) and claim(s)
AA1	U-61-188385	AA1 through AA5 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
AA2	U-63-16496	
AA3	U-63-65967	
AA4	U-63-65978	
AA5	U-63-82998	

Ref	Title	Distinction between reference(s) and claim(s)
BB1	AT&T Microelectronics, "1408-Type ODL Transceiver"Feb. 1994 preliminary data sheet.p.2-10	BB1 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.



BB2	Ronald L.Soderstrom et al., "An optical Data Link using a CD laser", SPIE Vol.1577 High Speed Fiber Networks and Channels, pp.163-173, 1991	BB2 and BB4 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
BB3	BCP, Inc. "Gigabits Over Multimode Optical Fiber" no date	
BB4	Ronald L.Soderstrom et al., "CD laser optical Data Links for Workstation and Midrange Computers", IEEE p.505-509, 1993.	
BB5	FDDI Low-Cost Fiber Physical Layer Medium Dependent (LCF-PMD) Common Receiver Footprint, no date.	BB5 does not disclose, at least, an optical module comprising a circuit board to carry thereon a connector, a laser diode driver, a laser diode module, a photo diode module and a semiconductor integrated circuit.
BB6	HP Module HFBR-5103, FDDI Data Sheet, <a href="http://www.hp.com/HP-COMP/fiber/hfbr5103.html">http://www.hp.com/HP-COMP/fiber/hfbr5103.html</a> , Jun. 11, 1998	BB6 and BB7 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
BB7	IBM Technical Disclosure Bulletin "Optical Link Card Guide/Retention System", <a href="http://www.patents.ibm.com/tlbs/tdb?&amp;order=93A+60964">www.patents.ibm.com/tlbs/tdb?&amp;order=93A+60964</a> , April 1993	
BB8	IBM, "A Proposal for a New High Performance..." "Optoelectronics Enterprise Oct. 1992 ANSI Meeting, Oct. 13, 1992	BB8 and BB9 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
BB9	IBM, et al, "GLM Family", FCSI-301-Ren Sun, GLM, ,,,,,, FCSI-301-Rev1.0, Feb. 16, 1994.	
BB10	Methode Electronics, Inc., "DM 1063-DBLM9 Copper Gigabit Link Module" data sheet. (no date)	BB10 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
BB11	"Raylan Joins Low-Wavelength Push -850 nm Transceiver", Electronic Engineering Times, Aug. 1993.	BB11 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.

Ref	Title	Distinction between reference(s) and claim(s)
CC1	Sumitomo Electric Fiber Optics Corp. "Transceiver Manufacturers to Support Common Footprint for Desktop FDDI Applications," June 23, 1992.	CC1 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser

		diode optical signal having a data transmission rate of 1000 Mbits/s or more.
CC2	Sun Microsystems computer Co. et al., Gigabit Interface Converter (GBIC), Rev 4.4, Dec. 1, 1997	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
CC3	Siemens, "Who provides Low-Cost Transceivers for all Standards?" no date.	CC3 through CC5 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
CC4	AMP "PC Board Connectors", Product Guide 82759, pp. 7104-7108, Catalog E2750 issued Jun. 1991	
CC5	AMP Inc. "Lytel Molded-Optronic SC Duplex Transceiver" Catalog 65922, Dec. 1993.	
CC6	AMPHENOL Engineering News vol. 7 No. 6., pp241, 264-65, Nov. 1994	CC6 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
CC7	Baldwin and Kellerman, "Fiber Optic Module Interface Attachment" Research disclosure, Kenneth Mason Publications Ltd., England, Apr. 1991.	CC7 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
CC8	Block and Gaio "Optical Link Card guide/Retention Sys" RESEARCH DISCLOSURE Kenneth Mason Publications Ltd., England, Apr. 1993.	CC8 and CC9 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
CC9	Cinch Hinge Connectors Catalog CM-16, Jul. 1963.	
CC10	Martin H. Weik, "Communication Standard Dictionary" p.454. definition of LED, Van Nostrand Reinhold Co.	CC10 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
CC11	Edward R. Salmon, Encapsulation of Electronic Devices and Components, Marcel Dekker Inc., New York, 1987	CC11 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electric signal to a laser diode optical signal, said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module, said laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
DD1	Dieter Gwinner,Conductive Coatings:Vacuum Evaporated Aluminum for Selective Shielding of Plastic Housings,no date.	DD1 through DD3 do not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
DD2	HEADS Up--Sumitomo Electric Lightwave joins Other in Announcement,May 11,1995	
DD3	Robert C. Herron,High Density Input/Output Connector Systems,3M Electronic Products Divisions,1990	
DD4	Shortwave Opto Assembly,IBM OptoElectronic Enterprises; IBM/OEE Market Survey Only, Rev.1,Jan.6,1993	DD4 and DD5 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
DD5	"Minimizing Electrostatic Discharge Damage to a Cartridge",IBM Technical Disclosure Bulletin, vol. 29 No. 10. Mar.,1987	
DD6	Japanese Standards Association " F04 Type Connectors for Optical Fiber Cords JIS C 5973"Japanese Standards Association,1990.	DD6 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
DD7	Ronald L..Soderstrom et al.,A Miniaturized Fiber Optic Laser Receptacle Using a Compact Disk(CD)··· FOC/LAN' 87&MFOC-WEST,pp.383-385,no date.	DD7 through DD9 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received from a mother board through a connector to a laser diode electric signal for a laser diode.
DD8	"Transceiver Module Assembly", IBM Technical Disclosure Bulletin,Oct.1979, <a href="https://www.delphion.com/tbds/tbd?o=79A+06370">https://www.delphion.com/tbds/tbd?o=79A+06370</a> ,last visited Mar.3,2005.	
DD9	Ronald L.Soderstrom et al.,Optical Components and Electronic Packaging for High Performance Optical Data Links,THE RESEARCH INVESTMENT,p.19-28(no date).	
DD10	Thomas & Betts INFO-LAN Modem 1998	DD10 does not disclose, at least, an optical module comprising a circuit board to carry thereon a connector,a laser diode driver,a laser diode module,a photo diode module and a semiconductor integrated circuit.
DD11	"Active component manufacturers lower the cost of fiber to the desktop",Lightwave,Feb.1994 pp.58,67.	DD11 does not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
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EE1	Fibre Distributed Date Interface(FDDI)-Token Ring Low-Cost Fibre Physical Layer Medium Dependent (LCF-PMD),American National Standards Institute,1996.	EE1 through EE11 do not disclose, at least, an optical ,module comprising a laser diode module including a laser diode,to convert a laser diode electric signal to a laser diode optical signal,said laser diode optical signal adapted for transmission to an optical fiber connected with said laser diode module,said laser diode optical signal having a data trasmission rate of 1000 Mbits/s or more.
EE2	Communications Standard Dictionary; p.454,definition of inhomogeneous fiber,Van Nostrand Reinhold Publishing,1983	
EE3	"Transmitter/receiver assembly simplifies use of fibre optics", Design Engineering,p.19,Button Press,Ltd.,April 1980.	
EE4	Ronald L.Soderstrom et al., "CD laser as a fiber optic source for computer date links",Fiber Optic Datacom and Computer Networks,SPIE-The International Society for Optical Engineerdings, Vol.1577,pp.174-181,1988	
EE5	David A.Knodel et al., "Open Fibre Control,a laser safety interlock technique",High-Speed Fiber Networks and Channels,SPIE-The International Society for Optical Engineering Proceedings,Vol.991,pp.179-182,1992	
EE6	"IBM Technical Disclosure Bulletin, Electrostatic Dissipative Enclosed Connector", Vol.34,No.7B,Dec.1991	
EE7	"High Reliability SW Laser For Optical Data Links", LEOS '93 Conference Proceedings, IEEE Lasers and Electro-Optics Society 1993 Annual Meeting;	
EE8	Minimizing Electrostatic Discharge to a Cartridge,IBM Technical Disclosure Bulletin,March 1987, <a href="https://www.delphion.com/tdb?o=87A%2060509">https://www.delphion.com/tdb?o=87A%2060509</a> ,last visited Mar.8,2005.	
EE9	K.P.Jackson et al., "High-Density,Array,Optical Interconnects for Multi-Chip Module Conference MCMC-92 Proceedings,IEEE Computer Society Press.	
EE10	TDB:Stackable Circuit Card Packaging within a Logic Cage,IBM Technical Disclosure Bulletin,Dec.1992, <a href="https://www.delphion.com/tbds/tdb?o=92A%2063485">https://www.delphion.com/tbds/tdb?o=92A%2063485</a> ,last visited Mar.8,2005	
EE11	Jeff Hechi,The Laser Guidebook,2nd ed.,McGraw Hill,Inc.,1992	

Claim Chart for Claim 69-105 of 10/766,488

Ref	Title	Distinction between reference(s) and claim(s)
A1	Re.32,502	A1 through A12 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
A2	USP2,899,669	
A3	USP3,264,601	
A4	USP3,332,860	
A5	USP3,474,380	
A6	USP3,497,866	
A7	USP3,523,269	
A8	USP3,670,290	
A9	USP3,673,545	
A10	USP3,706,869	
A11	USP3,737,729	
A12	USP3,790,923	
A13	USP3,792,284	A13 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
A14	USP3,805,116	A14 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
A15	USP3,809,908	A15 and A16 do not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
A16	USP3,976,877	

Ref	Title	Distinction between reference(s) and claim(s)
B1	USP3,990,761	B1 through B3 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
B2	USP4,047,242	
B3	USP4,156,903	
B4	USP4,161,650	B4 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
B5	USP4,167,303	B5 through B7 do not disclose, at least, an optical module comprising a laser diode module having an
B6	USP4,176,897	

B7	USP4,217,019	opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
B8	USP4,217,488	B8 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
B9	USP4,226,491	B9 and B10 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
B10	USP4,234,968	
B11	USP4,249,266	B11 through B13 do not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
B12	USP4,252,402	
B13	USP4,257,124	
B14	USP4,268,756	B14 and B15 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
B15	USP4,273,413	
B16	USP4,276,656	B16 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.

Ref	Title	Distinction between reference(s) and claim(s)
C1	USP4,294,682	C1 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
C2	USP4,295,181	C2 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
C3	USP4,301,543	C3 and C4 do not disclose, at least, an optical

C4	USP4,330,870	module comprising a semiconductor integrated circuit to output an electric digital signal according to a photodiode electric signal, a electric digital signal adapted for transmission as serial data to a computer through a connector.
C5	USP4,345,808	C5 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
C6	USP4,347,655	C6 does not disclose, at least, an optical module comprising a semiconductor integrated circuit to output an electric digital signal according to a photodiode electric signal, a electric digital signal adapted for transmission as serial data to a computer through a connector.
C7	USP4,357,606	C7 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
C8	USP4,360,248	C8 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
C9	USP4,366,565	C9 does not disclose, at least, an optical module comprising a semiconductor integrated circuit to output an electric digital signal according to a photodiode electric signal, a electric digital signal adapted for transmission as serial data to a computer through a connector.
C10	USP4,369,494	C10 through C16 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
C11	USP4,380,360	
C12	USP4,388,671	
C13	USP4,393,516	
C14	USP4,398,073	
C15	USP4,398,780	
C16	USP4,399,563	

Ref	Title	Distinction between reference(s) and claim(s)
D1	USP4,408,273	D1 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical

		fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
D2	USP4,422,088	D2 through D4 do not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
D3	USP4,427,879	
D4	USP4,430,699	
D5	USP4,434,537	D5 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
D6	USP4,437,190	D6 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
D7	USP4,439,006	D7 does not disclose, at least, an optical module comprising a semiconductor integrated circuit to output an electric digital signal according to a photodiode electric signal, a electric digital signal adapted for transmission as serial data to a computer through a connector.
D8	USP4,446,515	D8 and D9 do not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
D9	USP4,449,244	
D10	USP4,449,784	D10 through D13 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
D11	USP4,453,903	
D12	USP4,459,658	
D13	USP4,461,537	
D14	USP4,470,154	D14 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
D15	USP4,486,059	D15 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
D16	USP4,493,113	D16 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received



		from a computer through a connector.
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Ref	Title	Distinction between reference(s) and claim(s)
E1	USP4,501,021	E1 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
E2	USP4,502,130	E2 through E5 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
E3	USP4,505,035	
E4	USP4,506,937	
E5	USP4,510,553	
E6	USP4,511,207	E6 does not disclose, at least, an optical module comprising a semiconductor integrated circuit to output an electric digital signal according to a photodiode electric signal, a electric digital signal adapted for transmission as serial data to a computer through a connector.
E7	USP4,514,586	E7 through E14 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
E8	USP4,516,204	
E9	USP4,519,670	
E10	USP4,519,672	
E11	USP4,519,673	
E12	USP4,522,463	
E13	USP4,526,438	
E14	USP4,526,986	
E15	USP4,527,286	E15 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
E16	USP4,529,266	E16 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.

Ref	Title	Distinction between reference(s) and claim(s)
F1	USP4,530,566	F1 through F3 do not disclose, at least, an optical module comprising a laser diode module having an
F2	USP4,531,810	

F3	USP4,533,208	opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
F4	USP4,533,209	F4 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
F5	USP4,534,616	F5 through F8 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
F6	USP4,534,617	
F7	USP4,535,233	
F8	USP4,537,468	
F9	USP4,539,476	F9 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
F10	USP4,540,237	F10 through F16 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
F11	USP4,540,246	
F12	USP4,541,036	
F13	USP4,541,685	
F14	USP4,542,076	
F15	USP4,544,231	
F16	USP4,544,233	

Ref	Title	Distinction between reference(s) and claim(s)
G1	USP4,544,234	G1 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
G2	USP4,545,074	G2 and G3 do not disclose, at least, an optical module comprising a semiconductor integrated circuit to output an electric digital signal according to a photodiode electric signal, a electric digital signal adapted for transmission as serial data to a computer through a connector.
G3	USP4,545,077	
G4	USP4,545,642	G4 through G8 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
G5	USP4,545,643	
G6	USP4,545,644	
G7	USP4,545,645	
G8	USP4,548,465	

G9	USP4,548,466	G9 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
G10	USP4,548,467	G10 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
G11	USP4,549,782	G11 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
G12	USP4,549,783	G12 through G14 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
G13	USP4,550,975	
G14	USP4,553,811	
G15	USP4,553,813	G15 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
G16	USP4,553,814	G16 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.

Ref	Title	Distinction between reference(s) and claim(s)
H1	USP4,556,279	H1 through H10 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
H2	USP4,556,281	
H3	USP4,556,282	
H4	USP4,557,551	
H5	USP4,560,234	
H6	USP4,563,057	
H7	USP4,566,753	
H8	USP4,568,145	
H9	USP4,569,569	
H10	USP4,573,760	
H11	USP4,580,295	H11 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received

		from a computer through a connector.
H12	USP4,580,872	H12 through H16 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
H13	USP4,588,256	
H14	USP4,589,728	
H15	USP4,597,631	
H16	USP4,614,836	

Ref	Title	Distinction between reference(s) and claim(s)
I1	USP4,629,270	I1 and I2 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
I2	USP4,634,239	
I3	USP4,641,371	I3 does not disclose, at least, an optical module comprising a semiconductor integrated circuit to output an electric digital signal according to a photodiode electric signal, a electric digital signal adapted for transmission as serial data to a computer through a connector.
I4	USP4,647,148	I4 through I15 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
I5	USP4,652,976	
I6	USP4,663,240	
I7	USP4,663,603	
I8	USP4,678,264	
I9	USP4,679,883	
I10	USP4,695,106	
I11	USP4,697,864	
I12	USP4,708,433	
I13	USP4,715,675	
I14	USP4,720,630	
I15	USP4,722,584	
I16	USP4,736,100	I16 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.

Ref	Title	Distinction between reference(s) and claim(s)
J1	USP4,756,593	J1 through J15 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to
J2	USP4,762,388	
J3	USP4,767,179	
J4	USP4,772,931	

J5	USP4,779,952	output a laser diode optical signal to the at least one optical fiber.
J6	USP4,789,218	
J7	USP4,798,430	
J8	USP4,798,440	
J9	USP4,807,006	
J10	USP4,807,955	
J11	USP4,808,115	
J12	USP4,811,165	
J13	USP4,812,133	
J14	USP4,821,145	
J15	USP4,823,235	
J16	USP4,838,630	J16 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.

Ref	Title	Distinction between reference(s) and claim(s)
K1	USP4,840,451	K1 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
K2	USP4,844,581	K2 does not disclose, at least, an optical module comprising a semiconductor integrated circuit to output an electric digital signal according to a photodiode electric signal, a electric digital signal adapted for transmission as serial data to a computer through a connector.
K3	USP4,847,711	K3 through K9 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
K4	USP4,847,771	
K5	USP4,849,944	
K6	USP4,857,002	
K7	USP4,862,327	
K8	USP4,872,212	
K9	USP4,872,736	
K10	USP4,881,789	K10 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
K11	USP4,884,336	K11 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.

K12	USP4,897,711	K12 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
K13	USP4,906,197	K13 through K16 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
K14	USP4,927,225	
K15	USP4,944,568	
K16	USP4,945,448	

Ref	Title	Distinction between reference(s) and claim(s)
L1	USP4,953,929	L1 through L4 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
L2	USP4,955,817	
L3	USP4,963,104	
L4	USP4,967,312	
L5	USP4,977,329	L5 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
L6	USP4,979,793	L6 and L7 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
L7	USP4,979,794	
L8	USP4,986,625	L8 and L9 do not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
L9	USP4,989,934	
L10	USP4,990,104	L10 through L16 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
L11	USP4,991,062	
L12	USP5,002,495	
L13	USP5,004,434	
L14	USP5,006,286	
L15	USP5,011,425	
L16	USP5,029,254	

Ref	Title	Distinction between reference(s) and claim(s)
M1	USP5,035,482	M1 through M4 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one
M2	USP5,035,641	
M3	USP5,040,993	

M4	USP5,041,025	optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
M5	USP5,043,775	M5 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
M6	USP5,044,982	M6 through M14 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
M7	USP5,045,635	
M8	USP5,045,971	
M9	USP5,046,955	
M10	USP5,060,373	
M11	USP5,071,219	
M12	USP5,076,656	
M13	USP5,076,688	
M14	USP5,082,344	
M15	USP5,084,802	M15 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
M16	USP5,086,422	M16 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.

Ref	Title	Distinction between reference(s) and claim(s)
N1	USP5,091,991	N1 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
N2	USP5,093,879	N2 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
N3	USP5,094,623	N3 through N8 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
N4	USP5,101,463	
N5	USP5,104,243	
N6	USP5,107,404	
N7	USP5,108,294	
N8	USP5,109,453	
N9	USP5,113,467	N9 does not disclose, at least, an optical module

		comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
N10	USP5,116,239	N10 through N14 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
N11	USP5,117,476	
N12	USP5,118,362	
N13	USP5,118,904	
N14	USP5,120,578	
N15	USP5,122,893	N15 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
N16	USP5,124,885	N16 and N17 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
N17	USP5,125,849	
N18	USP5,127,071	N18 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
N19	USP5,132,871	N19 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.

Ref	Title	Distinction between reference(s) and claim(s)
O1	USP5,134,677	O1 through O3 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
O2	USP5,134,679	
O3	USP5,136,063	
O4	USP5,136,152	O4 and O5 do not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
O5	USP5,136,603	
O6	USP5,138,537	O6 through O8 do not disclose, at least, an optical module comprising a laser diode module having an
O7	USP5,138,678	



O8	USP5,140,663	opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
O9	USP5,155,786	O9 and O10 do not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
O10	USP5,157,769	
O11	USP5,167,139	O11 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
O12	USP5,168,537	O12 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
O13	USP5,170,146	O13 through O17 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
O14	USP5,171,167	
O15	USP5,173,059	
O16	USP5,183,404	
O17	USP5,183,405	

Ref	Title	Distinction between reference(s) and claim(s)
P1	USP5,195,911	P1 through P4 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
P2	USP5,202,536	
P3	USP5,207,597	
P4	USP5,212,752	
P5	USP5,212,754	P5 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
P6	USP5,218,519	P6 through P11 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
P7	USP5,225,760	
P8	USP5,233,676	
P9	USP5,233,674	
P10	USP5,234,353	
P11	USP5,238,426	
P12	USP5,241,614	P12 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.

P13	USP5,247,532	P13 does not disclose, at least, an optical module comprising a semiconductor integrated circuit to output an electric digital signal according to a photodiode electric signal, a electric digital signal adapted for transmission as serial data to a computer through a connector.
P14	USP5,259,052	P14 through P16 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
P15	USP5,259,054	
P16	USP5,262,923	
P17	USP5,271,079	P16 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.

Ref	Title	Distinction between reference(s) and claim(s)
Q1	USP5,274,729	Q1 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
Q2	USP5,285,466	Q2 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
Q3	USP5,285,511	Q3 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
Q4	USP5,285,512	Q4 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
Q5	USP5,286,207	Q5 through Q16 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
Q6	USP5,286,247	
Q7	USP5,288,247	
Q8	USP5,289,347	
Q9	USP5,296,813	
Q10	USP5,299,089	
Q11	USP5,304,069	

Q12	USP5,305,182	
Q13	USP5,311,408	
Q14	USP5,315,679	
Q15	USP5,317,663	
Q16	USP5,321,819	

Ref	Title	Distinction between reference(s) and claim(s)
R1	USP5,329,604	R1 through R3 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
R2	USP5,333,221	
R3	USP5,333,225	
R4	USP5,337,391	R4 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
R5	USP5,337,396	R5 and R6 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
R6	USP5,340,340	
R7	USP5,345,524	R7 and R8 do not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
R8	USP5,345,530	
R9	USP5,353,364	R9 does not disclose, at least, an optical module comprising a semiconductor integrated circuit to output an electric digital signal according to a photodiode electric signal, a electric digital signal adapted for transmission as serial data to a computer through a connector.
R10	USP5,353,634	R10 through R12 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
R11	USP5,356,300	
R12	USP5,357,402	
R13	USP5,361,244	R13 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
R14	USP5,361,318	R14 through R16 do not disclose, at least, an optical module comprising a laser diode module
R15	USP5,366,664	

R16	USP5,372,515	having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
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Ref	Title	Distinction between reference(s) and claim(s)
S1	USP5,375,040	S1 through S9 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
S2	USP5,383,793	
S3	USP5,388,995	
S4	USP5,390,268	
S5	USP5,393,249	
S6	USP5,397,242	
S7	USP5,398,154	
S8	USP5,398,295	
S9	USP5,408,384	
S10	USP5,414,787	S10 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
S11	USP5,416,668	S11 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
S12	USP5,416,870	S12 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
S13	USP5,416,872	S13 through S16 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
S14	USP5,419,717	
S15	USP5,424,573	
S16	USP5,428,703	

Ref	Title	Distinction between reference(s) and claim(s)
T1	USP5,428,704	T1 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
T2	USP5,434,747	T2 and T3 do not disclose, at least, an optical

T3	USP5,443,390	module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
T4	USP5,446,814	R4 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
T5	USP5,452,387	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T6	USP5,454,080	T6 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
T7	USP5,455,703	T7 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
T8	USP5,463,532	T8 and T9 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
T9	USP5,469,332	
T10	USP5,470,257	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T11	USP5,470,259	
T12	USP5,475,734	T12 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
T13	USP5,477,418	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T14	USP5,478,253	
T15	USP5,478,259	T15 and T16 do not disclose, at least, an optical

T16	USP5,478,260	module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
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Ref	Title	Distinction between reference(s) and claim(s)
U1	USP5,481,634	U1 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
U2	USP5,482,658	U2 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
U3	USP5,487,678	U3 and U4 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
U4	USP5,491,613	
U5	USP5,491,712	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U6	USP5,494,747	U6 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
U7	USP5,499,311	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U8	USP5,499,312	U8 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
U9	USP5,504,657	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

U10	USP5,506,921	U10 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
U11	USP5,506,922	U11 through U14 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
U12	USP5,507,668	
U13	USP5,526,235	
U14	USP5,527,991	
U15	USP5,534,662	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U16	USP5,535,296	

Ref	Title	Distinction between reference(s) and claim(s)
V1	USP5,535,364	V1 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
V2	USP5,545,845	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V3	USP5,546,281	
V4	USP5,547,385	
V5	USP5,548,641	V5 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
V6	USP5,548,677	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V7	USP5,554,031	V7 through V9 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
V8	USP5,554,037	
V9	USP5,567,167	
V10	USP5,577,064	V10 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received

		from a computer through a connector.
V11	USP5,580,269	V11 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
V12	USP5,588,850	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V13	USP5,598,319	V13 and V14 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
V14	USP5,599,595	
V15	USP5,600,470	V15 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
V16	USP5,613,860	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
W1	USP5,629,919	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
W2	USP5,631,998	
W3	USP5,653,596	
W4	USP5,659,459	W4 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
W5	USP5,675,428	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
W6	USP5,687,267	
W7	USP5,717,533	
W8	USP5,724,729	
W9	USP5,726,864	
W10	USP5,734,558	
W11	USP5,736,782	
W12	USP5,747,735	



W13	USP5,767,999	
W14	USP5,779,504	
W15	USP5,797,771	
W16	USP5,836,774	

Ref	Title	Distinction between reference(s) and claim(s)
X1	USP5,864,468	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
X2	USP5,879,173	
X3	DE.4239124 A1	X3 through X6 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
X4	EP 0 232792 A1	
X5	EP.0 228 278	
X6	EP.0 305112 A2	
X7	EP.0 314 651 A2	X7 and X8 do not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
X8	EP.0 413 489 A2	
X9	EP.0 437 161 A2	X9 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
X10	EP.0 456 298 B1	X10 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
X11	EP.0 530 791 A2	X11 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
X12	EP.0 535 473 A1	X12 through X14 do not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
X13	EP.0 588 014 A2	
X14	EP.0 600 645 A1	
X15	EP.0 613 032 A2	X15 does not disclose, at least, an optical module comprising a semiconductor integrated circuit to output an electric digital signal according to a photodiode electric signal, a electric digital signal adapted for transmission as serial data to a

		computer through a connector.
X16	EP.0 652 696 A1	X16 through X18 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
X17	EP.0 656 696 A1	
X18	EP.0 662 259 B1	
X19	EP.442 608 A2	X19 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
X20	WO 94/12900	X20 and X21 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
X21	JP.1-237783	

Ref	Title	Distinction between reference(s) and claim(s)
Y1	JP.2-151084	Y1 through Y4 do not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
Y2	JP.2-181710	
Y3	JP.2-278212	
Y4	JP.2-87837	
Y5	JP.3-20458	Y5 through Y7 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
Y6	JP.3-94869	
Y7	JP.4-109593	
Y8	JP.4-122905	Y8 through Y10 do not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
Y9	JP.4-165312	
Y10	JP.4-211208	
Y11	JP.4-221207	Y11 through Y13 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
Y12	JP.4-229962	
Y13	JP.4-230978	
Y14	JP.4-234715	Y14 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
Y15	JP.4-270305	Y15 through Y18 do not disclose, at least, an optical module comprising a laser diode module
Y16	JP.4-50901	

Y17	JP.4-87809	having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
Y18	JP.5-052802	
Y19	JP.5-134147	Y19 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.

Ref	Title	Distinction between reference(s) and claim(s)
Z1	JP.5-152607	Z1 and Z2 do not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
Z2	JP.5-188250	
Z3	JP.5-211379	Z3 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
Z4	JP.5-218581	Z4 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
Z5	JP.5-290913	Z5 through Z8 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
Z6	JP.5-70955	
Z7	JP.61-158046	
Z8	JP.61-188385	
Z9	JP.63-009325	Z9 does not disclose, at least, an optical module comprising a semiconductor integrated circuit to output an electric digital signal according to a photodiode electric signal, a electric digital signal adapted for transmission as serial data to a computer through a connector.
Z10	JP.63-16496	Z10 through Z19 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
Z11	JP.63-65967	
Z12	JP.63-65978	
Z13	JP.63-82998	
Z14	U-3-20458	
Z15	U-3-94869	
Z16	U-4-87809	
Z17	U-5-052802	
Z18	U-5-70955	

Z19	U-61-158046	
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Ref	Title	Distinction between reference(s) and claim(s)
AA1	U-61-188385	AA1 through AA5 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
AA2	U-63-16496	
AA3	U-63-65967	
AA4	U-63-65978	
AA5	U-63-82998	

Ref	Title	Distinction between reference(s) and claim(s)
BB1	AT&T Microelectronics, "1408-Type ODL Transceiver"Feb. 1994 preliminary data sheet.p.2-10	BB1 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
BB2	Ronald L.Soderstrom et al., "An optical Date Link using a CD laser", SPIE Vol.1577 High Speed Fiber Networks and Channels,pp.163-173,1991	BB2 through BB4 do not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
BB3	BCP, Inc. "Gigabits Over Multimode Optical Fiber"no date	
BB4	Ronald L.Soderstrom et al., "CD laser optical Date Links for Workstation and Midrange Computers", IEEE p.505-509,1993.	
BB5	FDDI Low-Cost Fiber Physiscal Layer Medium Dependent (LCF-PMD) Common Receiver Footprint,no date.	BB5 does not disclose, at least, an optical module comprising a semiconductor integrated circuit to output an electric digital signal according to a photodiode electric signal, a electric digital signal adapted for transmission as serial data to a computer through a connector.
BB6	HP Module HFBR-5103, FDDI Data Sheet,http://www.hp.com/HP-COMP/fiber/hfbr5103.html,Jun. 11,1998	BB6 and BB7 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
BB7	IBM Technical Disclosure Bulletin "Optical Link Card Guide/Retention System".www.patents.ibm.com/tlbs/tdb?&order=93A+60964,April 1993	
BB8	IBM, "A Proposal for a New High Performance... "OptopElectronics Enterprise Oct.1992 ANSI Meeting,Oct.13,1992	BB8 and BB9 do not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
BB9	IBM, et al,"GLM Family",FCSI-301-Ren Sun, GLM, ,,,,,, FCSI-301-Rev1.0, Feb. 16, 1994.	
BB10	Methode Electronics, Inc., "DM 1063-DBLM9 Copper Gigabit Link Module" data sheet.(no date)	BB10 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.

BB11	"Raylan Joins Low-Wavelength Push -850 nm Transceiver", Electronic Engineering Times, Aug. 1993.	BB11 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
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Ref	Title	Distinction between reference(s) and claim(s)
CC1	Sumitomo Electric Fiber Optics Corp. "Transceiver Manufacturers to Support Common Footprint for Desktop FDDI Applications," June 23, 1992.	CC1 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
CC2	Sun Microsystems computer Co. et al., Gigabit Interface Converter (GBIC), Rev 4.4, Dec. 1, 1997	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
CC3	Siemens, "Who provides Low-Cost Transceivers for all Standards?" no date.	CC3 through CC5 do not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
CC4	AMP "PC Board Connectors", Product Guide 82759, pp. 7104-7108, Catalog E2750 issued Jun. 1991	
CC5	AMP Inc. "Lytel Molded-Optronic SC Duplex Transceiver" Catalog 65922, Dec. 1993.	
CC6	AMPHENOL Engineering News vol. 7 No. 6, pp241, 264-65, Nov. 1994	CC6 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
CC7	Baldwin and Kellerman, "Fiber Optic Module Interface Attachment" Research disclosure, Kenneth Mason Publications Ltd., England, Apr. 1991.	CC7 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
CC8	Block and Gaio "Optical Link Card guide/Retention Sys" RESEARCH DISCLOSURE Kenneth Mason Publications Ltd., England, Apr. 1993.	CC8 and CC9 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
CC9	Cinch Hinge Connectors Catalog CM-16, Jul. 1963.	
CC10	Martin H. Weik, "Communication Standard Dictionary" p.454. definition of LED, Van Nostrand Reinhold Co.	CC10 does not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
CC11	Edward R. Salmon, Encapsulation of Electronic Devices and Components, Marcel Dekker Inc., New York, 1987	CC11 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical

	fiber.
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Ref	Title	Distinction between reference(s) and claim(s)
DD1	Dieter Gwinner,Conductive Coatings:Vacuum Evaporated Aluminum for Selective Shielding of Plastic Housings,no date.	DD1 through DD3 do not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
DD2	HEADS Up--Sumitomo Electric Lightwave joins Other in Announcement,May 11,1995	
DD3	Robert C. Herron,High Density Input/Output Connector Systems,3M Electronic Products Divisions,1990	
DD4	Shortwave Opto Assembly,IBM OptoElectronic Enterprises; IBM/OEE Market Survey Only, Rev.1,Jan.6,1993	DD4 and DD5 do not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
DD5	"Minimizing Electrostatic Discharge Damage to a Cartridge",IBM Technical Disclosure Bulletin, vol. 29 No. 10. Mar.,1987	
DD6	Japanese Standards Association " F04 Type Connectors for Optical Fiber Cords JIS C 5973"Japanese Standards Association,1990.	DD6 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
DD7	Ronald L.Soderstrom et al.,A Miniaturized Fiber Optic Laser Receptacle Using a Compact Disk(CD)... FOC/LAN' 87&MFOC-WEST,pp.383-385,no date.	DD7 through DD9 do not disclose, at least, an optical module comprising a laser diode driver to drive a laser diode module according to serial data received from a computer through a connector.
DD8	"Transceiver Module Assembly", IBM Technical Disclosure Bulletin,Oct. 1979, <a href="https://www.delphion.com/tbds/tdb?o=79A+06370">https://www.delphion.com/tbds/tdb?o=79A+06370</a> ,last visited Mar.3,2005.	
DD9	Ronald L.Soderstrom et al.,Optical Components and Electronic Packaging for High Performance Optical Data Links,THE RESEARCH INVESTMENT,p.19-28(no date).	
DD10	Thomas & Betts INFO-LAN Modem 1998	DD10 does not disclose, at least, an optical module comprising a semiconductor integrated circuit to output an electric digital signal according to a photodiode electric signal, a electric digital signal adapted for transmission as serial data to a computer through a connector.
DD11	"Active component manufacturers lower the cost of fiber to the desktop",Lightwave,Feb.1994 pp.58,67.	DD11 does not disclose, at least, an optical module comprising a laser diode module having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.

Ref	Title	Distinction between reference(s) and claim(s)
EE1	Fibre Distributed Data Interface(FDDI)-Token Ring Low-Cost Fibre Physical Layer Medium Dependent (LCF-PMD),American National Standards Institute,1996.	EE1 through EE11 do not disclose, at least, an optical module comprising a laser diode module

EE2	Communications Standard Dictionary; p.454,definition of inhomogeneous fiber,Van Nostrand Reinhold Publishing,1983	having an opening adapted for insertion of one of at least one optical fiber, said laser diode module adapted to output a laser diode optical signal to the at least one optical fiber.
EE3	"Transmitter/receiver assembly simplifies use of fibre optics", Design Engineering,p.19,Button Press,Ltd.,April 1980.	
EE4	Ronald L.Soderstrom et al., "CD laser as a fiber optic source for computer data links",Fiber Optic Datacom and Computer Networks,SPIE-The International Society for Optical Engineering,Vol.1577,pp.174-181,1988	
EE5	David A.Knodel et al., "Open Fibre Control,a laser safety interlock technique",High-Speed Fiber Networks and Channels,SPIE-The International Society for Optical Engineering Proceedings,Vol.991,pp.179-182,1992	
EE6	"IBM Technical Disclosure Bulletin, Electrostatic Dissipative Enclosed Connector", Vol.34,No.7B,Dec.1991	
EE7	"High Reliability SW Laser For Optical Data Links", LEOS '93 Conference Proceedings, IEEE Lasers and Electro-Optics Society 1993 Annual Meeting;	
EE8	Minimizing Electrostatic Discharge to a Cartridge,IBM Technical Disclosure Bulletin,March 1987, <a href="https://www.delphion.com/tdb?o=87A%2060509">https://www.delphion.com/tdb?o=87A%2060509</a> ,last visited Mar.8,2005.	
EE9	K.P.Jackson et al., "High-Density,Array,Optical Interconnects for Multi-Chip Module Conference MCMC-92 Proceedings,IEEE Computer Society Press.	
EE10	TDB:Stackable Circuit Card Packaging within a Logic Cage,IBM Technical Disclosure Bulletin,Dec.1992, <a href="https://www.delphion.com/tbds/tdb?o=92A%2063485">https://www.delphion.com/tbds/tdb?o=92A%2063485</a> ,last visited Mar.8,2005	
EE11	Jeff Hechi,The Laser Guidebook,2nd ed.,McGraw Hill,Inc.,1992	

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Ref	Title	Distinction between reference(s) and claim(s)
A1	Re.32,502	A1 through A12 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
A2	USP2,899,669	
A3	USP3,264,601	
A4	USP3,332,860	
A5	USP3,474,380	
A6	USP3,497,866	
A7	USP3,523,269	
A8	USP3,670,290	
A9	USP3,673,545	
A10	USP3,706,869	
A11	USP3,737,729	
A12	USP3,790,923	
A13	USP3,792,284	A13 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
A14	USP3,805,116	A14 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
A15	USP3,809,908	A15 through A16 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
A16	USP3,976,877	

Ref	Title	Distinction between reference(s) and claim(s)
B1	USP3,990,761	B1 through B3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
B2	USP4,047,242	
B3	USP4,156,903	
B4	USP4,161,650	B4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
B5	USP4,167,303	B5 through B7 do not disclose, at least, an optical module comprising a laser diode module to convert
B6	USP4,176,897	



B7	USP4,217,019	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
B8	USP4,217,488	B8 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
B9	USP4,226,491	B9 and B10 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
B10	USP4,234,968	
B11	USP4,249,266	B11 through B13 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
B12	USP4,252,402	
B13	USP4,257,124	
B14	USP4,268,756	B14 and B15 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
B15	USP4,273,413	
B16	USP4,276,656	B16 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
C1	USP4,294,682	C1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
C2	USP4,295,181	C2 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
C3	USP4,301,543	C3 and C4 do not disclose, at least, an optical

C4	USP4,330,870	module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected to a first edge of the circuit board.
C5	USP4,345,808	C5 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
C6	USP4,347,655	C6 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected to a first edge of the circuit board.
C7	USP4,357,606	C7 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
C8	USP4,360,248	C8 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
C9	USP4,366,565	C9 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected to a first edge of the circuit board.
C10	USP4,369,494	C10 through C15 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
C11	USP4,380,360	
C12	USP4,388,671	
C13	USP4,393,516	
C14	USP4,398,073	
C15	USP4,398,780	
C16	USP4,399,563	C16 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected to a first edge of the circuit board.

Ref	Title	Distinction between reference(s) and claim(s)
D1	USP4,408,273	D1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
D2	USP4,422,088	D2 through D4 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
D3	USP4,427,879	
D4	USP4,430,699	
D5	USP4,434,537	D5 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
D6	USP4,437,190	D6 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
D7	USP4,439,006	D7 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected to a first edge of the circuit board.
D8	USP4,446,515	D8 and D9 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
D9	USP4,449,244	
D10	USP4,449,784	D10 through D13 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
D11	USP4,453,903	
D12	USP4,459,658	
D13	USP4,461,537	
D14	USP4,470,154	D14 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
D15	USP4,486,059	D15 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal,

		which is transmitted at a data transmission rate of 1000Mbps/s or more.
D16	USP4,493,113	D16 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
E1	USP4,501,021	E1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
E2	USP4,502,130	E2 through E5 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
E3	USP4,505,035	
E4	USP4,506,937	
E5	USP4,510,553	
E6	USP4,511,207	E6 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected to a first edge of the circuit board.
E7	USP4,514,586	E7 through E14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
E8	USP4,516,204	
E9	USP4,519,670	
E10	USP4,519,672	
E11	USP4,519,673	
E12	USP4,522,463	
E13	USP4,526,438	
E14	USP4,526,986	
E15	USP4,527,286	E15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
E16	USP4,529,266	E16 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
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F1	USP4,530,566	F1 through F3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
F2	USP4,531,810	
F3	USP4,533,208	
F4	USP4,533,209	F4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
F5	USP4,534,616	F5 through F8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
F6	USP4,534,617	
F7	USP4,535,233	
F8	USP4,537,468	
F9	USP4,539,476	F9 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
F10	USP4,540,237	F10 through F16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
F11	USP4,540,246	
F12	USP4,541,036	
F13	USP4,541,685	
F14	USP4,542,076	
F15	USP4,544,231	
F16	USP4,544,233	

Ref	Title	Distinction between reference(s) and claim(s)
G1	USP4,544,234	G1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
G2	USP4,545,074	G2 and G3 do not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected to a first edge of the circuit board.
G3	USP4,545,077	
G4	USP4,545,642	G4 through G8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical
G5	USP4,545,643	
G6	USP4,545,644	
G7	USP4,545,645	

G8	USP4,548,465	signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
G9	USP4,548,466	G9 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
G10	USP4,548,467	G10 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
G11	USP4,549,782	G11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
G12	USP4,549,783	G12 through G14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
G13	USP4,550,975	
G14	USP4,553,811	
G15	USP4,553,813	G15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
G16	USP4,553,814	G16 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
H1	USP4,556,279	H1 through H10 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
H2	USP4,556,281	
H3	USP4,556,282	
H4	USP4,557,551	
H5	USP4,560,234	
H6	USP4,563,057	
H7	USP4,566,753	
H8	USP4,568,145	
H9	USP4,569,569	
H10	USP4,573,760	
H11	USP4,580,295	H11 does not disclose, at least, an optical module

		comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
H12	USP4,580,872	H12 through H16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
H13	USP4,588,256	
H14	USP4,589,728	
H15	USP4,597,631	
H16	USP4,614,836	

Ref	Title	Distinction between reference(s) and claim(s)
I1	USP4,629,270	I1 and I2 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
I2	USP4,634,239	
I3	USP4,641,371	I3 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected to a first edge of the circuit board.
I4	USP4,647,148	I4 through I16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
I5	USP4,652,976	
I6	USP4,663,240	
I7	USP4,663,603	
I8	USP4,678,264	
I9	USP4,679,883	
I10	USP4,695,106	
I11	USP4,697,864	
I12	USP4,708,433	
I13	USP4,715,675	
I14	USP4,720,630	
I15	USP4,722,584	
I16	USP4,736,100	

Ref	Title	Distinction between reference(s) and claim(s)
J1	USP4,756,593	J1 through J15 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission
J2	USP4,762,388	
J3	USP4,767,179	
J4	USP4,772,931	
J5	USP4,779,952	

J6	USP4,789,218	rate of 1000Mbps/s or more.
J7	USP4,798,430	
J8	USP4,798,440	
J9	USP4,807,006	
J10	USP4,807,955	
J11	USP4,808,115	
J12	USP4,811,165	
J13	USP4,812,133	
J14	USP4,821,145	
J15	USP4,823,235	
J16	USP4,838,630	J16 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
K1	USP4,840,451	K1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
K2	USP4,844,581	K2 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected to a first edge of the circuit board.
K3	USP4,847,711	K3 through K9 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
K4	USP4,847,771	
K5	USP4,849,944	
K6	USP4,857,002	
K7	USP4,862,327	
K8	USP4,872,212	
K9	USP4,872,736	
K10	USP4,881,789	K10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
K11	USP4,884,336	K11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
K12	USP4,897,711	K12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter



		to convert serial data, received from a mother board, into a laser diode electrical signal.
K13	USP4,906,197	K13 through K16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
K14	USP4,927,225	
K15	USP4,944,568	
K16	USP4,945,448	

Ref	Title	Distinction between reference(s) and claim(s)
L1	USP4,953,929	L1 through L4 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
L2	USP4,955,817	
L3	USP4,963,104	
L4	USP4,967,312	
L5	USP4,977,329	L5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
L6	USP4,979,793	L6 and L7 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
L7	USP4,979,794	
L8	USP4,986,625	L8 and L9 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
L9	USP4,989,934	
L10	USP4,990,104	L10 through L16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
L11	USP4,991,062	
L12	USP5,002,495	
L13	USP5,004,434	
L14	USP5,006,286	
L15	USP5,011,425	
L16	USP5,029,254	

Ref	Title	Distinction between reference(s) and claim(s)
M1	USP5,035,482	M1 through M4 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode
M2	USP5,035,641	
M3	USP5,040,993	

M4	USP5,041,025	optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
M5	USP5,043,775	M5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
M6	USP5,044,982	M6 through M14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
M7	USP5,045,635	
M8	USP5,045,971	
M9	USP5,046,955	
M10	USP5,060,373	
M11	USP5,071,219	
M12	USP5,076,656	
M13	USP5,076,688	
M14	USP5,082,344	
M15	USP5,084,802	M15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
M16	USP5,086,422	M16 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
N1	USP5,091,991	N1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
N2	USP5,093,879	N2 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
N3	USP5,094,623	N3 through N8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
N4	USP5,101,463	
N5	USP5,104,243	
N6	USP5,107,404	
N7	USP5,108,294	
N8	USP5,109,453	
N9	USP5,113,467	N9 does not disclose, at least, an optical module

		comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
N10	USP5,116,239	N10 through N14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
N11	USP5,117,476	
N12	USP5,118,362	
N13	USP5,118,904	
N14	USP5,120,578	
N15	USP5,122,893	N15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
N16	USP5,124,885	N16 and N17 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
N17	USP5,125,849	
N18	USP5,127,071	N18 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
N19	USP5,132,871	N19 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
O1	USP5,134,677	O1 through O3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
O2	USP5,134,679	
O3	USP5,136,063	
O4	USP5,136,152	O4 and O5 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
O5	USP5,136,603	
O6	USP5,138,537	O6 through O8 do not disclose, at least, an optical module comprising a laser diode module to convert
O7	USP5,138,678	

O8	USP5,140,663	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
O9	USP5,155,786	O9 and O10 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
O10	USP5,157,769	
O11	USP5,167,139	O11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
O12	USP5,168,537	O12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
O13	USP5,170,146	O13 through O17 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
O14	USP5,171,167	
O15	USP5,173,059	
O16	USP5,183,404	
O17	USP5,183,405	

Ref	Title	Distinction between reference(s) and claim(s)
P1	USP5,195,911	P1 through P4 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
P2	USP5,202,536	
P3	USP5,207,597	
P4	USP5,212,752	
P5	USP5,212,754	P5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
P6	USP5,218,519	P6 through P11 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
P7	USP5,225,760	
P8	USP5,233,676	
P9	USP5,233,674	
P10	USP5,234,353	
P11	USP5,238,426	
P12	USP5,241,614	P12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother

		board, into a laser diode electrical signal.
P13	USP5,247,532	P13 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected to a first edge of the circuit board.
P14	USP5,259,052	P14 through P16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
P15	USP5,259,054	
P16	USP5,262,923	
P17	USP5,271,079	P17 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
Q1	USP5,274,729	Q1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
Q2	USP5,285,466	Q2 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
Q3	USP5,285,511	Q3 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
Q4	USP5,285,512	Q4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
Q5	USP5,286,207	Q5 through Q16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
Q6	USP5,286,247	
Q7	USP5,288,247	
Q8	USP5,289,347	
Q9	USP5,296,813	
Q10	USP5,299,089	

Q11	USP5,304,069	
Q12	USP5,305,182	
Q13	USP5,311,408	
Q14	USP5,315,679	
Q15	USP5,317,663	
Q16	USP5,321,819	

Ref	Title	Distinction between reference(s) and claim(s)
R1	USP5,329,604	R1 through R3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
R2	USP5,333,221	
R3	USP5,333,225	
R4	USP5,337,391	R4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
R5	USP5,337,396	R5 and R6 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
R6	USP5,340,340	
R7	USP5,345,524	R7 and R8 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
R8	USP5,345,530	
R9	USP5,353,364	R9 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected to a first edge of the circuit board.
R10	USP5,353,634	R10 through R12 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
R11	USP5,356,300	
R12	USP5,357,402	
R13	USP5,361,244	R13 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
R14	USP5,361,318	R14 through R16 do not disclose, at least, an

R15	USP5,366,664	optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
R16	USP5,372,515	

Ref	Title	Distinction between reference(s) and claim(s)
S1	USP5,375,040	S1 through S9 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
S2	USP5,383,793	
S3	USP5,388,995	
S4	USP5,390,268	
S5	USP5,393,249	
S6	USP5,397,242	
S7	USP5,398,154	
S8	USP5,398,295	
S9	USP5,408,384	
S10	USP5,414,787	S10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
S11	USP5,416,668	S11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
S12	USP5,416,870	S12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
S13	USP5,416,872	S13 through S16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
S14	USP5,419,717	
S15	USP5,424,573	
S16	USP5,428,703	

Ref	Title	Distinction between reference(s) and claim(s)
T1	USP5,428,704	T1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
T2	USP5,434,747	T2 and T3 do not disclose, at least, an optical

T3	USP5,443,390	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
T4	USP5,446,814	T4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
T5	USP5,452,387	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T6	USP5,454,080	T6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
T7	USP5,455,703	T7 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
T8	USP5,463,532	T8 and T9 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
T9	USP5,469,332	
T10	USP5,470,257	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T11	USP5,470,259	
T12	USP5,475,734	T12 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
T13	USP5,477,418	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T14	USP5,478,253	
T15	USP5,478,259	T15 and T16 do not disclose, at least, an optical



T16	USP5,478,260	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
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Ref	Title	Distinction between reference(s) and claim(s)
U1	USP5,481,634	U1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
U2	USP5,482,658	U2 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
U3	USP5,487,678	U3 and U4 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
U4	USP5,491,613	
U5	USP5,491,712	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U6	USP5,494,747	U6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
U7	USP5,499,311	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U8	USP5,499,312	U8 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
U9	USP5,504,657	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

U10	USP5,506,921	U10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
U11	USP5,506,922	U11 through U14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
U12	USP5,507,668	
U13	USP5,526,235	
U14	USP5,527,991	
U15	USP5,534,662	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U16	USP5,535,296	

Ref	Title	Distinction between reference(s) and claim(s)
V1	USP5,535,364	V1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
V2	USP5,545,845	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V3	USP5,546,281	
V4	USP5,547,385	
V5	USP5,548,641	V5 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
V6	USP5,548,677	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V7	USP5,554,031	V7 through V9 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
V8	USP5,554,037	
V9	USP5,567,167	
V10	USP5,577,064	V10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother

		board, into a laser diode electrical signal.
V11	USP5,580,269	V11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
V12	USP5,588,850	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V13	USP5,598,319	V13 and V14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
V14	USP5,599,595	
V15	USP5,600,470	V15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
V16	USP5,613,860	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
W1	USP5,629,919	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
W2	USP5,631,998	
W3	USP5,653,596	
W4	USP5,659,459	W4 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
W5	USP5,675,428	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
W6	USP5,687,267	
W7	USP5,717,533	
W8	USP5,724,729	
W9	USP5,726,864	
W10	USP5,734,558	
W11	USP5,736,782	
W12	USP5,747,735	

W13	USP5,767,999	
W14	USP5,779,504	
W15	USP5,797,771	
W16	USP5,836,774	

Ref	Title	Distinction between reference(s) and claim(s)
X1	USP5,864,468	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
X2	USP5,879,173	
X3	DE.4239124 A1	X3 through X6 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
X4	EP 0 232792 A1	
X5	EP.0 228 278	
X6	EP.0 305112 A2	
X7	EP.0 314 651 A2	X7 and X8 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
X8	EP.0 413 489 A2	
X9	EP.0 437 161 A2	X9 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
X10	EP.0 456 298 B1	X10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
X11	EP.0 530 791 A2	X11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
X12	EP.0 535 473 A1	X12 through X14 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
X13	EP.0 588 014 A2	
X14	EP.0 600 645 A1	
X15	EP.0 613 032 A2	X15 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode

		and a photo diode module are electrically connected to a first edge of the circuit board.
X16	EP.0 652 696 A1	X16 through X18 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
X17	EP.0 656 696 A1	
X18	EP.0 662 259 B1	
X19	EP.442 608 A2	X19 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
X20	WO 94/12900	X20 and X21 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
X21	JP.1-237783	

Ref	Title	Distinction between reference(s) and claim(s)
Y1	JP.2-151084	Y1 through Y4 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
Y2	JP.2-181710	
Y3	JP.2-278212	
Y4	JP.2-87837	
Y5	JP.3-20458	Y5 through Y7 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
Y6	JP.3-94869	
Y7	JP.4-109593	
Y8	JP.4-122905	Y8 through Y10 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
Y9	JP.4-165312	
Y10	JP.4-211208	
Y11	JP.4-221207	Y11 through Y13 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
Y12	JP.4-229962	
Y13	JP.4-230978	
Y14	JP.4-234715	Y14 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
Y15	JP.4-270305	Y15 through Y18 do not disclose, at least, an

Y16	JP.4-50901	optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
Y17	JP.4-87809	
Y18	JP.5-052802	
Y19	JP.5-134147	Y19 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
Z1	JP.5-152607	Z1 and Z2 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
Z2	JP.5-188250	
Z3	JP.5-211379	Z3 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
Z4	JP.5-218581	Z4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
Z5	JP.5-290913	Z5 through Z8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
Z6	JP.5-70955	
Z7	JP.61-158046	
Z8	JP.61-188385	
Z9	JP.63-009325	Z9 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected to a first edge of the circuit board.
Z10	JP.63-16496	Z10 through Z19 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
Z11	JP.63-65967	
Z12	JP.63-65978	
Z13	JP.63-82998	
Z14	U-3-20458	
Z15	U-3-94869	
Z16	U-4-87809	
Z17	U-5-052802	

Z18	U-5-70955	
Z19	U-61-158046	

Ref	Title	Distinction between reference(s) and claim(s)
AA1	U-61-188385	AA1 through AA5 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
AA2	U-63-16496	
AA3	U-63-65967	
AA4	U-63-65978	
AA5	U-63-82998	

Ref	Title	Distinction between reference(s) and claim(s)
BB1	AT&T Microelectronics, "1408-Type ODL Transceiver"Feb. 1994 preliminary data sheet.p.2-10	BB1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
BB2	Ronald L.Soderstrom et al., "An optical Data Link using a CD laser", SPIE Vol.1577 High Speed Fiber Networks and Channels,pp.163-173,1991	BB2 through BB4 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
BB3	BCP, Inc. "Gigabits Over Multimode Optical Fiber"no date	
BB4	Ronald L.Soderstrom et al., "CD laser optical Data Links for Workstation and Midrange Computers", IEEE p.505-509,1993.	
BB5	FDDI Low-Cost Fiber Physical Layer Medium Dependent (LCF-PMD) Common Receiver Footprint,no date.	BB5 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected to a first edge of the circuit board.
BB6	HP Module HFBR-5103, FDDI Data Sheet,http://www.hp.com/HP-COMP/fiber/hfbr5103.html,Jun.11,1998	BB6 and BB7 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
BB7	IBM Technical Disclosure Bulletin "Optical Link Card Guide/Retention System".www.patents.ibm.com/tlbs/tdb?&order=93A+60964,April 1993	
BB8	IBM, "A Proposal for a New High Performance... "Optoelectronics Enterprise Oct.1992 ANSI Meeting,Oct.13,1992	BB8 and BB9 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
BB9	IBM, et al, "GLM Family", FCSI-301-Ren Sun, GLM, ,,,,,, FCSI-301-Rev1.0, Feb. 16, 1994.	
BB10	Methode Electronics, Inc., "DM 1063-DBLM9 Copper Gigabit Link Module" data sheet.(no date)	BB10 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal,

		which is transmitted at a data transmission rate of 1000Mbps/s or more.
BB11	"Raylan Joins Low-Wavelength Push -850 nm Transceiver",Electronic Engineering Times,Aug.1993.	BB11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
CC1	Sumitomo Electric Fiber Optics Corp. "Transceiver Manufacturers to Support Common Footprint for Desktop FDDI Applications, " June 23, 1992.	CC1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
CC2	Sun Microsystems computer Co. et al., Gigabit Interface Converter (GBIC), Rev 4.4, Dec. 1, 1997	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan
CC3	Siemens, "Who provides Low-Cost Transceivers for all Sandards?" no date.	CC3 through CC5 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
CC4	AMP "PC Board Connectors", Product Guide 82759, pp. 7104-7108, Catalog E2750 issued Jun. 1991	
CC5	AMP Inc. "Lytel Molded-Optronic SC Duplex Transceiver" Catalog 65922,Dec.1993.	
CC6	AMPHENOL Engineering News vol. 7 No. 6. , pp241, 264-65, Nov. 1994	CC6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
CC7	Baldwin and Kellerman, "Fiber Optic Module Interface Attachment" Research disclosure,Kenneth Mason Publications Ltd.,England,Apr.1991.	CC7 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
CC8	Block and Gaio "Optical Link Card guide/Retention Sys" RESEARCH DISCLOSURE Kenneth Mason Publications Ltd.,England,Apr.1993.	CC8 and CC9 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbps/s or more.
CC9	Cinch Hinge Connectors Catalog CM-16, Jul. 1963.	
CC10	Martin H. Weik,"Communication Standard Dictionary"p.454.definition of LED,Van Nostrand Reinhold Co.	CC10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
CC11	Edward R.Salmon,Encapsulation of Electronic Devices and Components,Marcel Dekker Inc.,New York,1987	CC11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser



		diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
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Ref	Title	Distinction between reference(s) and claim(s)
DD1	Dieter Gwinner,Conductive Coatings,Vacuum Evaporated Aluminum for Selective Shielding of Plastic Housings,no date.	DD1 through DD3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
DD2	HEADS Up--Sumitomo Electric Lightwave joins Other in Announcement,May 11,1995	
DD3	Robert C. Herron,High Density Input/Output Connector Systems,3M Electronic Products Divisions,1990	
DD4	Shortwave Opto Assembly,IBM OptoElectronic Enterprises; IBM/OEE Market Survey Only, Rev.1,Jan.6,1993	DD4 and DD5 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
DD5	"Minimizing Electrostatic Discharge Damage to a Cartridge",IBM Technical Disclosure Bulletin, vol. 29 No. 10. Mar.,1987	
DD6	Japanese Standards Association " F04 Type Connectors for Optical Fiber Cords JIS C 5973"Japanese Standards Association,1990.	DD6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
DD7	Ronald L.Soderstrom et al.,A Miniaturized Fiber Optic Laser Receptacle Using a Compact Disk(CD)... FOC/LAN'87&MFOC-WEST,pp.383-385,no date.	DD7 through DD9 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a mother board, into a laser diode electrical signal.
DD8	"Transceiver Module Assembly", IBM Technical Disclosure Bulletin,Oct. 1979,https://www.delphion.com/tbds/tdb?o=79A+06370,last visited Mar.3,2005.	
DD9	Ronald L.Soderstrom et al.,Optical Components and Electronic Packaging for High Performance Optical Data Links,THE RESEARCH INVESTMENT,p.19-28(no date).	
DD10	Thomas & Betts INFO-LAN Modem 1998	DD10 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected to a first edge of the circuit board.
DD11	"Active component manufacturers lower the cost of fiber to the desktop",Lightwave,Feb.1994 pp.58,67.	DD11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
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EE1	Fibre Distributed Date Interface(FDDI)-Token Ring Low-Cost Fibre Physical Layer Medium Dependent (LCF-PMD),American National Standards Institute,1996.	EE1 through EE11 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000Mbits/s or more.
EE2	Communications Standard Dictionary; p.454,definition of inhomogeneous fiber,Van Nostrand Reinhold Publishing,1983	
EE3	"Transmitter/receiver assembly simplifies use of fibre optics", Design Engineering,p.19,Button Press,Ltd.,April 1980.	
EE4	Ronald L.Soderstrom et al., "CD laser as a fiber optic source for computer date links",Fiber Optic Datacom and Computer Networks,SPIE-The International Society for Optical Engineerings, Vol.1577,pp.174-181,1988	
EE5	David A.Knodel et al., "Open Fibre Control,a laser safety interlock technique",High-Speed Fiber Networks and Channels,SPIE-The International Society for Optical Engineering Proceedings,Vol.991,pp.179-182,1992	
EE6	"IBM Technical Disclosure Bulletin, Electrostatic Dissipative Enclosed Connector",Vol.34,No.7B,Dec.1991	
EE7	"High Reliability SW Laser For Optical Data Links", LEOS '93 Conference Proceedings, IEEE Lasers and Electro-Optics Society 1993 Annual Meeting;	
EE8	Minimizing Electrostatic Discharge to a Cartridge,IBM Technical Disclosure Bulletin,March 1987, <a href="https://www.delphion.com/tdb?o=87A%2060509">https://www.delphion.com/tdb?o=87A%2060509</a> ,last visited Mar.8,2005.	
EE9	K.P.Jackson et al., "High-Density,Array,Optical Interconnects for Multi-Chip Module Conference MCMC-92 Proceedings,IEEE Computer Society Press.	
EE10	TDB:Stackable Circuit Card Packaging within a Logic Cage,IBM Technical Disclosure Bulletin,Dec.1992, <a href="https://www.delphion.com/tbds/tdb?o=92A%2063485">https://www.delphion.com/tbds/tdb?o=92A%2063485</a> ,last visited Mar.8,2005	
EE11	Jeff Hechi,The Laser Guidebook,2nd ed.,McGraw Hill,Inc.,1992	

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Ref	Title	Distinction between reference(s) and claim(s)
A1	Re.32,502	A1 through A16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that foreign matter is prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.
A2	USP2,899,669	
A3	USP3,264,601	
A4	USP3,332,860	
A5	USP3,474,380	
A6	USP3,497,866	
A7	USP3,523,269	
A8	USP3,670,290	
A9	USP3,673,545	
A10	USP3,706,869	
A11	USP3,737,729	
A12	USP3,790,923	
A13	USP3,792,284	
A14	USP3,805,116	
A15	USP3,809,908	
A16	USP3,976,877	

Ref	Title	Distinction between reference(s) and claim(s)
B1	USP3,990,761	B1 through B16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that foreign matter is prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.
B2	USP4,047,242	
B3	USP4,156,903	
B4	USP4,161,650	
B5	USP4,167,303	
B6	USP4,176,897	
B7	USP4,217,019	
B8	USP4,217,488	
B9	USP4,226,491	
B10	USP4,234,968	
B11	USP4,249,266	
B12	USP4,252,402	
B13	USP4,257,124	
B14	USP4,268,756	
B15	USP4,273,413	
B16	USP4,276,656	

Ref	Title	Distinction between reference(s) and claim(s)
C1	USP4,294,682	C1 through C16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that foreign matter is
C2	USP4,295,181	
C3	USP4,301,543	
C4	USP4,330,870	

C5	USP4,345,808	prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.
C6	USP4,347,655	
C7	USP4,357,606	
C8	USP4,360,248	
C9	USP4,366,565	
C10	USP4,369,494	
C11	USP4,380,360	
C12	USP4,388,671	
C13	USP4,393,516	
C14	USP4,398,073	
C15	USP4,398,780	
C16	USP4,399,563	

Ref	Title	Distinction between reference(s) and claim(s)
D1	USP4,408,273	D1 through D16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that foreign matter is prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.
D2	USP4,422,088	
D3	USP4,427,879	
D4	USP4,430,699	
D5	USP4,434,537	
D6	USP4,437,190	
D7	USP4,439,006	
D8	USP4,446,515	
D9	USP4,449,244	
D10	USP4,449,784	
D11	USP4,453,903	
D12	USP4,459,658	
D13	USP4,461,537	
D14	USP4,470,154	
D15	USP4,486,059	
D16	USP4,493,113	

Ref	Title	Distinction between reference(s) and claim(s)
E1	USP4,501,021	E1 through E16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that foreign matter is prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.
E2	USP4,502,130	
E3	USP4,505,035	
E4	USP4,506,937	
E5	USP4,510,553	
E6	USP4,511,207	
E7	USP4,514,586	
E8	USP4,516,204	
E9	USP4,519,670	
E10	USP4,519,672	
E11	USP4,519,673	

E12	USP4,522,463	
E13	USP4,526,438	
E14	USP4,526,986	
E15	USP4,527,286	
E16	USP4,529,266	

Ref	Title	Distinction between reference(s) and claim(s)
F1	USP4,530,566	F1 through F16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that foreign matter is prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.
F2	USP4,531,810	
F3	USP4,533,208	
F4	USP4,533,209	
F5	USP4,534,616	
F6	USP4,534,617	
F7	USP4,535,233	
F8	USP4,537,468	
F9	USP4,539,476	
F10	USP4,540,237	
F11	USP4,540,246	
F12	USP4,541,036	
F13	USP4,541,685	
F14	USP4,542,076	
F15	USP4,544,231	
F16	USP4,544,233	

Ref	Title	Distinction between reference(s) and claim(s)
G1	USP4,544,234	G1 through G16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that foreign matter is prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.
G2	USP4,545,074	
G3	USP4,545,077	
G4	USP4,545,642	
G5	USP4,545,643	
G6	USP4,545,644	
G7	USP4,545,645	
G8	USP4,548,465	
G9	USP4,548,466	
G10	USP4,548,467	
G11	USP4,549,782	
G12	USP4,549,783	
G13	USP4,550,975	
G14	USP4,553,811	

G15	USP4,553,813	
G16	USP4,553,814	

Ref	Title	Distinction between reference(s) and claim(s)
H1	USP4,556,279	H1 through H16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that foreign matter is prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.
H2	USP4,556,281	
H3	USP4,556,282	
H4	USP4,557,551	
H5	USP4,560,234	
H6	USP4,563,057	
H7	USP4,566,753	
H8	USP4,568,145	
H9	USP4,569,569	
H10	USP4,573,760	
H11	USP4,580,295	
H12	USP4,580,872	
H13	USP4,588,256	
H14	USP4,589,728	
H15	USP4,597,631	
H16	USP4,614,836	

Ref	Title	Distinction between reference(s) and claim(s)
I1	USP4,629,270	I1 through I16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that foreign matter is prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.
I2	USP4,634,239	
I3	USP4,641,371	
I4	USP4,647,148	
I5	USP4,652,976	
I6	USP4,663,240	
I7	USP4,663,603	
I8	USP4,678,264	
I9	USP4,679,883	
I10	USP4,695,106	
I11	USP4,697,864	
I12	USP4,708,433	
I13	USP4,715,675	
I14	USP4,720,630	
I15	USP4,722,584	
I16	USP4,736,100	

Ref	Title	Distinction between reference(s) and claim(s)
J1	USP4,756,593	J1 through J16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser
J2	USP4,762,388	

J3	USP4,767,179	diode module and a second elastic part to protect a photo diode module, such that foreign matter is prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.
J4	USP4,772,931	
J5	USP4,779,952	
J6	USP4,789,218	
J7	USP4,798,430	
J8	USP4,798,440	
J9	USP4,807,006	
J10	USP4,807,955	
J11	USP4,808,115	
J12	USP4,811,165	
J13	USP4,812,133	
J14	USP4,821,145	
J15	USP4,823,235	
J16	USP4,838,630	

Ref	Title	Distinction between reference(s) and claim(s)
K1	USP4,840,451	K1 through K16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that foreign matter is prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.
K2	USP4,844,581	
K3	USP4,847,711	
K4	USP4,847,771	
K5	USP4,849,944	
K6	USP4,857,002	
K7	USP4,862,327	
K8	USP4,872,212	
K9	USP4,872,736	
K10	USP4,881,789	
K11	USP4,884,336	
K12	USP4,897,711	
K13	USP4,906,197	
K14	USP4,927,225	
K15	USP4,944,568	
K16	USP4,945,448	

Ref	Title	Distinction between reference(s) and claim(s)
L1	USP4,953,929	L1 through L16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that foreign matter is prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.
L2	USP4,955,817	
L3	USP4,963,104	
L4	USP4,967,312	
L5	USP4,977,329	
L6	USP4,979,793	
L7	USP4,979,794	
L8	USP4,986,625	
L9	USP4,989,934	

L10	USP4,990,104	
L11	USP4,991,062	
L12	USP5,002,495	
L13	USP5,004,434	
L14	USP5,006,286	
L15	USP5,011,425	
L16	USP5,029,254	

Ref	Title	Distinction between reference(s) and claim(s)
M1	USP5,035,482	M1 through M16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that foreign matter is prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.
M2	USP5,035,641	
M3	USP5,040,993	
M4	USP5,041,025	
M5	USP5,043,775	
M6	USP5,044,982	
M7	USP5,045,635	
M8	USP5,045,971	
M9	USP5,046,955	
M10	USP5,060,373	
M11	USP5,071,219	
M12	USP5,076,656	
M13	USP5,076,688	
M14	USP5,082,344	
M15	USP5,084,802	
M16	USP5,086,422	

Ref	Title	Distinction between reference(s) and claim(s)
N1	USP5,091,991	N1 through N19 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that foreign matter is prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.
N2	USP5,093,879	
N3	USP5,094,623	
N4	USP5,101,463	
N5	USP5,104,243	
N6	USP5,107,404	
N7	USP5,108,294	
N8	USP5,109,453	
N9	USP5,113,467	
N10	USP5,116,239	
N11	USP5,117,476	
N12	USP5,118,362	
N13	USP5,118,904	
N14	USP5,120,578	
N15	USP5,122,893	
N16	USP5,124,885	



N17	USP5,125,849	
N18	USP5,127,071	
N19	USP5,132,871	

Ref	Title	Distinction between reference(s) and claim(s)
O1	USP5,134,677	O1 through O17 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that foreign matter is prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.
O2	USP5,134,679	
O3	USP5,136,063	
O4	USP5,136,152	
O5	USP5,136,603	
O6	USP5,138,537	
O7	USP5,138,678	
O8	USP5,140,663	
O9	USP5,155,786	
O10	USP5,157,769	
O11	USP5,167,139	
O12	USP5,168,537	
O13	USP5,170,146	
O14	USP5,171,167	
O15	USP5,173,059	
O16	USP5,183,404	
O17	USP5,183,405	

Ref	Title	Distinction between reference(s) and claim(s)
P1	USP5,195,911	P1 through P17 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that foreign matter is prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.
P2	USP5,202,536	
P3	USP5,207,597	
P4	USP5,212,752	
P5	USP5,212,754	
P6	USP5,218,519	
P7	USP5,225,760	
P8	USP5,233,676	
P9	USP5,233,674	
P10	USP5,234,353	
P11	USP5,238,426	
P12	USP5,241,614	
P13	USP5,247,532	
P14	USP5,259,052	
P15	USP5,259,054	
P16	USP5,262,923	
P17	USP5,271,079	

Ref	Title	Distinction between reference(s) and claim(s)
Q1	USP5,274,729	Q1 through Q16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that foreign matter is prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.
Q2	USP5,285,466	
Q3	USP5,285,511	
Q4	USP5,285,512	
Q5	USP5,286,207	
Q6	USP5,286,247	
Q7	USP5,288,247	
Q8	USP5,289,347	
Q9	USP5,296,813	
Q10	USP5,299,089	
Q11	USP5,304,069	
Q12	USP5,305,182	
Q13	USP5,311,408	
Q14	USP5,315,679	
Q15	USP5,317,663	
Q16	USP5,321,819	

Ref	Title	Distinction between reference(s) and claim(s)
R1	USP5,329,604	R1 through R16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that foreign matter is prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.
R2	USP5,333,221	
R3	USP5,333,225	
R4	USP5,337,391	
R5	USP5,337,396	
R6	USP5,340,340	
R7	USP5,345,524	
R8	USP5,345,530	
R9	USP5,353,364	
R10	USP5,353,634	
R11	USP5,356,300	
R12	USP5,357,402	
R13	USP5,361,244	
R14	USP5,361,318	
R15	USP5,366,664	
R16	USP5,372,515	

Ref	Title	Distinction between reference(s) and claim(s)
S1	USP5,375,040	S1 through S16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that foreign matter is prevented from invading into a first opening of the laser diode module and a second opening of the
S2	USP5,383,793	
S3	USP5,388,995	
S4	USP5,390,268	
S5	USP5,393,249	
S6	USP5,397,242	

S7	USP5,398,154	photo diode module when the module cap is removably attached to an optical module.
S8	USP5,398,295	
S9	USP5,408,384	
S10	USP5,414,787	
S11	USP5,416,668	
S12	USP5,416,870	
S13	USP5,416,872	
S14	USP5,419,717	
S15	USP5,424,573	
S16	USP5,428,703	

Ref	Title	Distinction between reference(s) and claim(s)
T1	USP5,428,704	T1 through T4 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that foreign matter is prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.
T2	USP5,434,747	
T3	USP5,443,390	
T4	USP5,446,814	
T5	USP5,452,387	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T6	USP5,454,080	T6 through T9 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that foreign matter is prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.
T7	USP5,455,703	
T8	USP5,463,532	
T9	USP5,469,332	
T10	USP5,470,257	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T11	USP5,470,259	
T12	USP5,475,734	T12 does not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that foreign matter is prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.
T13	USP5,477,418	These references do not qualify as prior art.

T14	USP5,478,253	Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T15	USP5,478,259	T15 and T16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that foreign matter is prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.
T16	USP5,478,260	

Ref	Title	Distinction between reference(s) and claim(s)
U1	USP5,481,634	U1 through U4 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that foreign matter is prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.
U2	USP5,482,658	
U3	USP5,487,678	
U4	USP5,491,613	
U5	USP5,491,712	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U6	USP5,494,747	U6 does not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that foreign matter is prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.
U7	USP5,499,311	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U8	USP5,499,312	U8 does not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that foreign matter is prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.

U9	USP5,504,657	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U10	USP5,506,921	U10 through U14 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that foreign matter is prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.
U11	USP5,506,922	
U12	USP5,507,668	
U13	USP5,526,235	
U14	USP5,527,991	
U15	USP5,534,662	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U16	USP5,535,296	

Ref	Title	Distinction between reference(s) and claim(s)
V1	USP5,535,364	V1 does not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that foreign matter is prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.
V2	USP5,545,845	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V3	USP5,546,281	
V4	USP5,547,385	
V5	USP5,548,641	V5 does not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that foreign matter is prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.
V6	USP5,548,677	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V7	USP5,554,031	V7 through V11 do not disclose, at least, a module cap comprising a first elastic part to protect a laser
V8	USP5,554,037	

V9	USP5,567,167	diode module and a second elastic part to protect a photo diode module, such that foreign matter is prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.
V10	USP5,577,064	
V11	USP5,580,269	
V12	USP5,588,850	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V13	USP5,598,319	V13 through V15 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that foreign matter is prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.
V14	USP5,599,595	
V15	USP5,600,470	
V16	USP5,613,860	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
W1	USP5,629,919	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
W2	USP5,631,998	
W3	USP5,653,596	
W4	USP5,659,459	W4 does not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that foreign matter is prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.
W5	USP5,675,428	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
W6	USP5,687,267	
W7	USP5,717,533	
W8	USP5,724,729	
W9	USP5,726,864	
W10	USP5,734,558	
W11	USP5,736,782	
W12	USP5,747,735	

W13	USP5,767,999	
W14	USP5,779,504	
W15	USP5,797,771	
W16	USP5,836,774	

Ref	Title	Distinction between reference(s) and claim(s)
X1	USP5,864,468	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
X2	USP5,879,173	
X3	DE.4239124 A1	X3 through X21 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that foreign matter is prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.
X4	EP 0 232792 A1	
X5	EP.0 228 278	
X6	EP.0 305112 A2	
X7	EP.0 314 651 A2	
X8	EP.0 413 489 A2	
X9	EP.0 437 161 A2	
X10	EP.0 456 298 B1	
X11	EP.0 530 791 A2	
X12	EP.0 535 473 A1	
X13	EP.0 588 014 A2	
X14	EP.0 600 645 A1	
X15	EP.0 613 032 A2	
X16	EP.0 652 696 A1	
X17	EP.0 656 696 A1	
X18	EP.0 662 259 B1	
X19	EP.442 608 A2	
X20	WO 94/12900	
X21	JP.1-237783	

Ref	Title	Distinction between reference(s) and claim(s)
Y1	JP.2-151084	Y1 through Y19 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that foreign matter is prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.
Y2	JP.2-181710	
Y3	JP.2-278212	
Y4	JP.2-87837	
Y5	JP.3-20458	
Y6	JP.3-94869	
Y7	JP.4-109593	
Y8	JP.4-122905	
Y9	JP.4-165312	
Y10	JP.4-211208	
Y11	JP.4-221207	
Y12	JP.4-229962	

Y13	JP.4-230978	
Y14	JP.4-234715	
Y15	JP.4-270305	
Y16	JP.4-50901	
Y17	JP.4-87809	
Y18	JP.5-052802	
Y19	JP.5-134147	

Ref	Title	Distinction between reference(s) and claim(s)
Z1	JP.5-152607	Z1 through Z19 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that foreign matter is prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.
Z2	JP.5-188250	
Z3	JP.5-211379	
Z4	JP.5-218581	
Z5	JP.5-290913	
Z6	JP.5-70955	
Z7	JP.61-158046	
Z8	JP.61-188385	
Z9	JP.63-009325	
Z10	JP.63-16496	
Z11	JP.63-65967	
Z12	JP.63-65978	
Z13	JP.63-82998	
Z14	U-3-20458	
Z15	U-3-94869	
Z16	U-4-87809	
Z17	U-5-052802	
Z18	U-5-70955	
Z19	U-61-158046	

Ref	Title	Distinction between reference(s) and claim(s)
AA1	U-61-188385	AA1 through AA5 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that foreign matter is prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.
AA2	U-63-16496	
AA3	U-63-65967	
AA4	U-63-65978	
AA5	U-63-82998	

Ref	Title	Distinction between reference(s) and claim(s)
BB1	AT&T Microelectronics, "1408-Type ODL Transceiver"Feb. 1994 preliminary data sheet.p.2-10	BB1 through BB11 do not disclose, at least, a



BB2	Ronald L.Soderstrom et al., "An optical Data Link using a CD laser", SPIE Vol. 1577 High Speed Fiber Networks and Channels, pp.163-173, 1991	module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that foreign matter is prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.
BB3	BCP, Inc. "Gigabits Over Multimode Optical Fiber" no date	
BB4	Ronald L.Soderstrom et al., "CD laser optical Data Links for Workstation and Midrange Computers", IEEE p.505-509, 1993.	
BB5	FDDI Low-Cost Fiber Physical Layer Medium Dependent (LCF-PMD) Common Receiver Footprint, no date.	
BB6	HP Module HFBR-5103, FDDI Data Sheet, <a href="http://www.hp.com/HP-COMP/fiber/hfbr5103.html">http://www.hp.com/HP-COMP/fiber/hfbr5103.html</a> , Jun. 11, 1998	
BB7	IBM Technical Disclosure Bulletin "Optical Link Card Guide/Retention System". <a href="http://www.patents.ibm.com/tlbs/tdb?&amp;order=93A+60964">www.patents.ibm.com/tlbs/tdb?&amp;order=93A+60964</a> , April 1993	
BB8	IBM, "A Proposal for a New High Performance... "OptoElectronics Enterprise Oct.1992 ANSI Meeting, Oct.13, 1992	
BB9	IBM, et al, "GLM Family", FCSI-301-Ren Sun, GLM, ,,,,,, FCSI-301-Rev1.0, Feb. 16, 1994.	
BB10	Method Electronics, Inc., "DM 1063-DBLM9 Copper Gigabit Link Module" data sheet.(no date)	
BB11	"Raylan Joins Low-Wavelength Push -850 nm Transceiver", Electronic Engineering Times, Aug. 1993.	

Ref	Title	Distinction between reference(s) and claim(s)
CC1	Sumitomo Electric Fiber Optics Corp. "Transceiver Manufacturers to Support Common Footprint for Desktop FDDI Applications," June 23, 1992.	CC1 does not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that foreign matter is prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.
CC2	Sun Microsystems computer Co. et al., Gigabit Interface Converter (GBIC), Rev 4.4, Dec. 1, 1997	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
CC3	Siemens, "Who provides Low-Cost Transceivers for all Standards?" no date.	CC3 through CC11 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that foreign matter is prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.
CC4	AMP "PC Board Connectors", Product Guide 82759, pp. 7104-7108, Catalog E2750 issued Jun. 1991	
CC5	AMP Inc. "Lytel Molded-Optronic SC Duplex Transceiver" Catalog 65922, Dec. 1993.	
CC6	AMPHENOL Engineering News vol. 7 No. 6., pp241, 264-65, Nov. 1994	
CC7	Baldwin and Kellerman, "Fiber Optic Module Interface Attachment" Research disclosure, Kenneth Mason Publications Ltd., England, Apr. 1991.	
CC8	Block and Gaio "Optical Link Card guide/Retention Sys" RESEARCH DISCLOSURE Kenneth Mason Publications Ltd., England, Apr. 1993.	
CC9	Cinch Hinge Connectors Catalog CM-16, Jul. 1963.	
CC10	Martin H. Weik, "Communication Standard Dictionary" p.454. definition of LED, Van Nostrand Reinhold Co.	

CC11	Edward R.Salmon,Encapsulation of Electronic Devices and Components,Marcel Dekker Inc.,New York,1987	
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Ref	Title	Distinction between reference(s) and claim(s)
DD1	Dieter Gwinner,Conductive Coatings:Vacuum Evaporated Aluminum for Selective Shielding of Plastic Housings,no date.	DD1 through DD11 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that foreign matter is prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.
DD2	HEADS Up--Sumitomo Electric Lightwave joins Other in Announcement,May 11,1995	
DD3	Robert C. Herron,High Density Input/Output Connector Systems,3M Electronic Products Divisions,1990	
DD4	Shortwave Opto Assembly,IBM OptoElectronic Enterprises; IBM/OEE Market Survey Only, Rev.1,Jan.6,1993	
DD5	"Minimizing Electrostatic Discharge Damage to a Cartridge",IBM Technical Disclosure Bulletin, vol. 29 No. 10. Mar.,1987	
DD6	Japanese Standards Association " F04 Type Connectors for Optical Fiber Cords JIS C 5973"Japanese Standards Association,1990.	
DD7	Ronald L.Soderstrom et al.,A Miniaturized Fiber Optic Laser Receptacle Using a Compact Disk(CD)··· FOC/LAN' 87&MFOC-WEST,pp.383-385,no date.	
DD8	"Transceiver Module Assembly", IBM Technical Disclosure Bulletin,Oct.1979,https://www.delphion.com/tbds/tdb?o=79A+06370,last visited Mar.3,2005.	
DD9	Ronald L.Soderstrom et al.,Optical Components and Electronic Packaging for High Performance Optical Data Links,THE RESEARCH INVESTMENT,p.19-28(no date).	
DD10	Thomas & Betts INFO-LAN Modem 1998	
DD11	"Active component manufacturers lower the cost of fiber to the desktop",Lightwave,Feb.1994 pp.58,67.	

Ref	Title	Distinction between reference(s) and claim(s)
EE1	Fibre Distributed Date Interface(FDDI)-Token Ring Low-Cost Fibre Physical Layer Medium Dependent (LCF-PMD),American National Standards Institute,1996.	EE1 through EE11 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that foreign matter is prevented from invading into a first opening of the laser diode module and a second opening of the photo diode module when the module cap is removably attached to an optical module.
EE2	Communications Standard Dictionary; p.454,definition of inhomogeneous fiber,Van Nostrand Reinhold Publishing,1983	
EE3	"Transmitter/receiver assembly simplifies use of fibre optics", Design Engineering,p.19,Button Press,Ltd.,April 1980.	
EE4	Ronald L.Soderstrom et al., "CD laser as a fiber optic source for computer data links",Fiber Optic Datacom and Computer Networks,SPIE-The International Society for Optical Engineerings,Vol. 1577,pp.174-181,1988	
EE5	David A.Knodel et al., "Open Fibre Control,a laser safety interlock technique",High-Speed Fiber Networks and Channels,SPIE-The International Society for Optical Engineering Proceedings,Vol.991,pp.179-182,1992	

EE6	"IBM Technical Disclosure Bulletin, Electrostatic Dissipative Enclosed Connector", Vol.34, No.7B, Dec.1991	
EE7	"High Reliability SW Laser For Optical Data Links", LEOS '93 Conference Proceedings, IEEE Lasers and Electro-Optics Society 1993 Annual Meeting;	
EE8	Minimizing Electrostatic Discharge to a Cartridge, IBM Technical Disclosure Bulletin, March 1987, <a href="https://www.delphion.com/tdb?o=87A%2060509">https://www.delphion.com/tdb?o=87A%2060509</a> , last visited Mar.8,2005.	
EE9	K.P.Jackson et al., "High-Density, Array, Optical Interconnects for Multi-Chip Module Conference MCMC-92 Proceedings, IEEE Computer Society Press.	
EE10	TDB:Stackable Circuit Card Packaging within a Logic Cage, IBM Technical Disclosure Bulletin, Dec.1992, <a href="https://www.delphion.com/tbds/tdb?o=92A%2063485">https://www.delphion.com/tbds/tdb?o=92A%2063485</a> , last visited Mar.8,2005	
EE11	Jeff Hechi, The Laser Guidebook, 2nd ed., McGraw Hill, Inc., 1992	

Claim Chart for Claims 128-138 of 10/766,488

Ref	Title	Distinction between reference(s) and claim(s)
A1	Re.32,502	A1 through A12 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
A2	USP2,899,669	
A3	USP3,264,601	
A4	USP3,332,860	
A5	USP3,474,380	
A6	USP3,497,866	
A7	USP3,523,269	
A8	USP3,670,290	
A9	USP3,673,545	
A10	USP3,706,869	
A11	USP3,737,729	
A12	USP3,790,923	
A13	USP3,792,284	A13 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
A14	USP3,805,116	A14 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
A15	USP3,809,908	A15 and A16 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
A16	USP3,976,877	

Ref	Title	Distinction between reference(s) and claim(s)
B1	USP3,990,761	B1 through B3 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
B2	USP4,047,242	
B3	USP4,156,903	
B4	USP4,161,650	B4 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a

		laser diode.
B5	USP4,167,303	B5 through B7 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
B6	USP4,176,897	
B7	USP4,217,019	
B8	USP4,217,488	B8 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
B9	USP4,226,491	B9 and B10 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
B10	USP4,234,968	
B11	USP4,249,266	B11 through B13 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
B12	USP4,252,402	
B13	USP4,257,124	
B14	USP4,268,756	B14 and B15 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
B15	USP4,273,413	
B16	USP4,276,656	B16 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.

Ref	Title	Distinction between reference(s) and claim(s)
C1	USP4,294,682	C1 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
C2	USP4,295,181	C2 does not disclose, at least, an optical module

		comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
C3	USP4,301,543	C3 and C4 do not disclose, at least, an optical module comprising a sole circuit board to mount thereon a surface mount type connector, a laser diode driver, a laser diode module, a photo diode module and a semiconductor integrated circuit.
C4	USP4,330,870	
C5	USP4,345,808	C5 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
C6	USP4,347,655	C6 does not disclose, at least, an optical module comprising a sole circuit board to mount thereon a surface mount type connector, a laser diode driver, a laser diode module, a photo diode module and a semiconductor integrated circuit.
C7	USP4,357,606	C7 doesnot disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
C8	USP4,360,248	C8 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
C9	USP4,366,565	C9 does not disclose, at least, an optical module comprising a sole circuit board to mount thereon a surface mount type connector, a laser diode driver, a laser diode module, a photo diode module and a semiconductor integrated circuit.
C10	USP4,369,494	C10 through C15 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber
C11	USP4,380,360	
C12	USP4,388,671	
C13	USP4,393,516	
C14	USP4,398,073	

C15	USP4,398,780	the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
C16	USP4,399,563	C16 does not disclose, at least, an optical module comprising a sole circuit board to mount thereon a surface mount type connector, a laser diode driver, a laser diode module, a photo diode module and a semiconductor integrated circuit.

Ref	Title	Distinction between reference(s) and claim(s)
D1	USP4,408,273	D1 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
D2	USP4,422,088	D2 through D4 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
D3	USP4,427,879	
D4	USP4,430,699	
D5	USP4,434,537	D5 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
D6	USP4,437,190	D6 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
D7	USP4,439,006	D7 does not disclose, at least, an optical module comprising a sole circuit board to mount thereon a surface mount type connector, a laser diode driver, a laser diode module, a photo diode module and a semiconductor integrated circuit.
D8	USP4,446,515	D8 and D9 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
D9	USP4,449,244	
D10	USP4,449,784	D10 through D13 do not disclose, at least, an optical module comprising a laser diode module
D11	USP4,453,903	

D12	USP4,459,658	including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
D13	USP4,461,537	
D14	USP4,470,154	D14 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
D15	USP4,486,059	D15 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
D16	USP4,493,113	D16 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.

Ref	Title	Distinction between reference(s) and claim(s)
E1	USP4,501,021	E1 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
E2	USP4,502,130	E2 through E5 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
E3	USP4,505,035	
E4	USP4,506,937	
E5	USP4,510,553	
E6	USP4,511,207	E6 does not disclose, at least, an optical module comprising a sole circuit board to mount thereon a surface mount type connector, a laser diode driver, a laser diode module, a photo diode module and a semiconductor integrated circuit.
E7	USP4,514,586	E7 through E14 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which
E8	USP4,516,204	
E9	USP4,519,670	
E10	USP4,519,672	



E11	USP4,519,673	adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
E12	USP4,522,463	
E13	USP4,526,438	
E14	USP4,526,986	
E15	USP4,527,286	E15 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
E16	USP4,529,266	E16 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
F1	USP4,530,566	F1 through F3 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
F2	USP4,531,810	
F3	USP4,533,208	
F4	USP4,533,209	F4 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
F5	USP4,534,616	F5 through F8 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
F6	USP4,534,617	
F7	USP4,535,233	
F8	USP4,537,468	
F9	USP4,539,476	F9 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
F10	USP4,540,237	F10 through F16 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical
F11	USP4,540,246	
F12	USP4,541,036	

F13	USP4,541,685	signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
F14	USP4,542,076	
F15	USP4,544,231	
F16	USP4,544,233	

Ref	Title	Distinction between reference(s) and claim(s)
G1	USP4,544,234	G1 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
G2	USP4,545,074	G2 and G3 does not disclose, at least, an optical module comprising a sole circuit board to mount thereon a surface mount type connector, a laser diode driver, a laser diode module, a photo diode module and a semiconductor integrated circuit.
G3	USP4,545,077	
G4	USP4,545,642	G4 through G8 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
G5	USP4,545,643	
G6	USP4,545,644	
G7	USP4,545,645	
G8	USP4,548,465	
G9	USP4,548,466	G9 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
G10	USP4,548,467	G10 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
G11	USP4,549,782	G11 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
G12	USP4,549,783	G12 through G14 do not disclose, at least, an optical module comprising a laser diode module
G13	USP4,550,975	

G14	USP4,553,811	including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
G15	USP4,553,813	G15 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
G16	USP4,553,814	G16 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
H1	USP4,556,279	H1 through H10 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
H2	USP4,556,281	
H3	USP4,556,282	
H4	USP4,557,551	
H5	USP4,560,234	
H6	USP4,563,057	
H7	USP4,566,753	
H8	USP4,568,145	
H9	USP4,569,569	
H10	USP4,573,760	
H11	USP4,580,295	H11 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
H12	USP4,580,872	H12 through H16 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
H13	USP4,588,256	
H14	USP4,589,728	
H15	USP4,597,631	
H16	USP4,614,836	

Ref	Title	Distinction between reference(s) and claim(s)
I1	USP4,629,270	I1 and I2 do not disclose, at least, an optical module

I2	USP4,634,239	comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
I3	USP4,641,371	I3 does not disclose, at least, an optical module comprising a sole circuit board to mount thereon a surface mount type connector, a laser diode driver, a laser diode module, a photo diode module and a semiconductor integrated circuit.
I4	USP4,647,148	I4 through I16 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
I5	USP4,652,976	
I6	USP4,663,240	
I7	USP4,663,603	
I8	USP4,678,264	
I9	USP4,679,883	
I10	USP4,695,106	
I11	USP4,697,864	
I12	USP4,708,433	
I13	USP4,715,675	
I14	USP4,720,630	
I15	USP4,722,584	
I16	USP4,736,100	

Ref	Title	Distinction between reference(s) and claim(s)
J1	USP4,756,593	J1 through J15 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
J2	USP4,762,388	
J3	USP4,767,179	
J4	USP4,772,931	
J5	USP4,779,952	
J6	USP4,789,218	
J7	USP4,798,430	
J8	USP4,798,440	
J9	USP4,807,006	
J10	USP4,807,955	
J11	USP4,808,115	
J12	USP4,811,165	
J13	USP4,812,133	
J14	USP4,821,145	
J15	USP4,823,235	
J16	USP4,838,630	J16 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type

		connector to a laser diode electrical signal for a laser diode.
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Ref	Title	Distinction between reference(s) and claim(s)
K1	USP4,840,451	K1 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
K2	USP4,844,581	K2 does not disclose, at least, an optical module comprising a sole circuit board to mount thereon a surface mount type connector, a laser diode driver, a laser diode module, a photo diode module and a semiconductor integrated circuit.
K3	USP4,847,711	K3 through K9 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
K4	USP4,847,771	
K5	USP4,849,944	
K6	USP4,857,002	
K7	USP4,862,327	
K8	USP4,872,212	
K9	USP4,872,736	
K10	USP4,881,789	K10 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
K11	USP4,884,336	K11 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
K12	USP4,897,711	K12 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
K13	USP4,906,197	K13 through K16 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
K14	USP4,927,225	
K15	USP4,944,568	
K16	USP4,945,448	

Ref	Title	Distinction between reference(s) and claim(s)
L1	USP4,953,929	L1 through L4 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
L2	USP4,955,817	
L3	USP4,963,104	
L4	USP4,967,312	
L5	USP4,977,329	L5 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
L6	USP4,979,793	L6 and L7 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
L7	USP4,979,794	
L8	USP4,986,625	L8 and L9 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
L9	USP4,989,934	
L10	USP4,990,104	L10 through L16 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
L11	USP4,991,062	
L12	USP5,002,495	
L13	USP5,004,434	
L14	USP5,006,286	
L15	USP5,011,425	
L16	USP5,029,254	

Ref	Title	Distinction between reference(s) and claim(s)
M1	USP5,035,482	M1 through M4 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
M2	USP5,035,641	
M3	USP5,040,993	
M4	USP5,041,025	
M5	USP5,043,775	M5 does not disclose, at least, an optical module comprising a laser diode driver to convert serial

		data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
M6	USP5,044,982	M6 through M14 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
M7	USP5,045,635	
M8	USP5,045,971	
M9	USP5,046,955	
M10	USP5,060,373	
M11	USP5,071,219	
M12	USP5,076,656	
M13	USP5,076,688	
M14	USP5,082,344	
M15	USP5,084,802	M15 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
M16	USP5,086,422	M16 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
N1	USP5,091,991	N1 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
N2	USP5,093,879	N2 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
N3	USP5,094,623	N3 through N8 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
N4	USP5,101,463	
N5	USP5,104,243	
N6	USP5,107,404	
N7	USP5,108,294	
N8	USP5,109,453	

N9	USP5,113,467	N9 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
N10	USP5,116,239	N10 through N14 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
N11	USP5,117,476	
N12	USP5,118,362	
N13	USP5,118,904	
N14	USP5,120,578	
N15	USP5,122,893	N15 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
N16	USP5,124,885	N16 and N17 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
N17	USP5,125,849	
N18	USP5,127,071	N18 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
N19	USP5,132,871	N19 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
O1	USP5,134,677	O1 through O3 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
O2	USP5,134,679	
O3	USP5,136,063	
O4	USP5,136,152	O4 and O5 do not disclose, at least, an optical



O5	USP5,136,603	module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
O6	USP5,138,537	O6 through O8 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
O7	USP5,138,678	
O8	USP5,140,663	
O9	USP5,155,786	O9 and O10 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
O10	USP5,157,769	
O11	USP5,167,139	O11 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
O12	USP5,168,537	O12 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
O13	USP5,170,146	O13 through O17 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
O14	USP5,171,167	
O15	USP5,173,059	
O16	USP5,183,404	
O17	USP5,183,405	

Ref	Title	Distinction between reference(s) and claim(s)
P1	USP5,195,911	P1 through P4 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
P2	USP5,202,536	
P3	USP5,207,597	
P4	USP5,212,752	
P5	USP5,212,754	P5 does not disclose, at least, an optical module

		comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
P6	USP5,218,519	P6 through P11 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
P7	USP5,225,760	
P8	USP5,233,676	
P9	USP5,233,674	
P10	USP5,234,353	
P11	USP5,238,426	
P12	USP5,241,614	P12 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
P13	USP5,247,532	P13 does not disclose, at least, an optical module comprising a sole circuit board to mount thereon a surface mount type connector, a laser diode driver, a laser diode module, a photo diode module and a semiconductor integrated circuit.
P14	USP5,259,052	P14 through P16 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
P15	USP5,259,054	
P16	USP5,262,923	
P17	USP5,271,079	P17 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.

Ref	Title	Distinction between reference(s) and claim(s)
Q1	USP5,274,729	Q1 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
Q2	USP5,285,466	Q2 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type

		connector to a laser diode electrical signal for a laser diode.
Q3	USP5,285,511	Q3 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
Q4	USP5,285,512	Q4 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
Q5	USP5,286,207	Q5 through Q16 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
Q6	USP5,286,247	
Q7	USP5,288,247	
Q8	USP5,289,347	
Q9	USP5,296,813	
Q10	USP5,299,089	
Q11	USP5,304,069	
Q12	USP5,305,182	
Q13	USP5,311,408	
Q14	USP5,315,679	
Q15	USP5,317,663	
Q16	USP5,321,819	

Ref	Title	Distinction between reference(s) and claim(s)
R1	USP5,329,604	R1 through R3 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
R2	USP5,333,221	
R3	USP5,333,225	
R4	USP5,337,391	R4 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
R5	USP5,337,396	R5 and R6 do not disclose, at least, an optical

R6	USP5,340,340	module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
R7	USP5,345,524	R7 and R8 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
R8	USP5,345,530	
R9	USP5,353,364	R9 does not disclose, at least, an optical module comprising a sole circuit board to mount thereon a surface mount type connector, a laser diode driver, a laser diode module, a photo diode module and a semiconductor integrated circuit.
R10	USP5,353,634	R10 through R12 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
R11	USP5,356,300	
R12	USP5,357,402	
R13	USP5,361,244	R13 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
R14	USP5,361,318	R14 through R16 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
R15	USP5,366,664	
R16	USP5,372,515	

Ref	Title	Distinction between reference(s) and claim(s)
S1	USP5,375,040	S1 through S9 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
S2	USP5,383,793	
S3	USP5,388,995	
S4	USP5,390,268	
S5	USP5,393,249	
S6	USP5,397,242	
S7	USP5,398,154	
S8	USP5,398,295	

S9	USP5,408,384	
S10	USP5,414,787	S10 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
S11	USP5,416,668	S11 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
S12	USP5,416,870	S12 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
S13	USP5,416,872	S13 through S16 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
S14	USP5,419,717	
S15	USP5,424,573	
S16	USP5,428,703	

Ref	Title	Distinction between reference(s) and claim(s)
T1	USP5,428,704	T1 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
T2	USP5,434,747	T2 and T3 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
T3	USP5,443,390	
T4	USP5,446,814	T4 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
T5	USP5,452,387	This reference does not qualify as prior art.

		Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T6	USP5,454,080	T6 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
T7	USP5,455,703	T7 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
T8	USP5,463,532	T8 and T9 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
T9	USP5,469,332	
T10	USP5,470,257	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T11	USP5,470,259	
T12	USP5,475,734	T12 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
T13	USP5,477,418	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T14	USP5,478,253	
T15	USP5,478,259	T15 and T16 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
T16	USP5,478,260	

Ref	Title	Distinction between reference(s) and claim(s)
U1	USP5,481,634	U1 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
U2	USP5,482,658	U2 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
U3	USP5,487,678	U3 and U4 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
U4	USP5,491,613	
U5	USP5,491,712	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U6	USP5,494,747	U6 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
U7	USP5,499,311	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U8	USP5,499,312	U8 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
U9	USP5,504,657	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U10	USP5,506,921	U10 does not disclose, at least, an optical module comprising a laser diode driver to convert serial

		data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
U11	USP5,506,922	U11 through U14 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
U12	USP5,507,668	
U13	USP5,526,235	
U14	USP5,527,991	
U15	USP5,534,662	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U16	USP5,535,296	

Ref	Title	Distinction between reference(s) and claim(s)
V1	USP5,535,364	V1 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
V2	USP5,545,845	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V3	USP5,546,281	
V4	USP5,547,385	
V5	USP5,548,641	V5 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
V6	USP5,548,677	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V7	USP5,554,031	V7 through V9 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
V8	USP5,554,037	
V9	USP5,567,167	



V10	USP5,577,064	V10 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
V11	USP5,580,269	V11 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
V12	USP5,588,850	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V13	USP5,598,319	V13 and V14 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
V14	USP5,599,595	
V15	USP5,600,470	V15 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
V16	USP5,613,860	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
W1	USP5,629,919	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
W2	USP5,631,998	
W3	USP5,653,596	
W4	USP5,659,459	W4 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.

W5	USP5,675,428	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
W6	USP5,687,267	
W7	USP5,717,533	
W8	USP5,724,729	
W9	USP5,726,864	
W10	USP5,734,558	
W11	USP5,736,782	
W12	USP5,747,735	
W13	USP5,767,999	
W14	USP5,779,504	
W15	USP5,797,771	
W16	USP5,836,774	

Ref	Title	Distinction between reference(s) and claim(s)
X1	USP5,864,468	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
X2	USP5,879,173	
X3	DE.4239124 A1	X3 through X6 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
X4	EP 0 232792 A1	
X5	EP.0 228 278	
X6	EP.0 305112 A2	
X7	EP.0 314 651 A2	X7 and X8 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
X8	EP.0 413 489 A2	
X9	EP.0 437 161 A2	X9 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
X10	EP.0 456 298 B1	X10 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
X11	EP.0 530 791 A2	X11 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into

		a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
X12	EP.0 535 473 A1	X12 through X14 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
X13	EP.0 588 014 A2	
X14	EP.0 600 645 A1	
X15	EP.0 613 032 A2	X15 does not disclose, at least, an optical module comprising a sole circuit board to mount thereon a surface mount type connector, a laser diode driver, a laser diode module, a photo diode module and a semiconductor integrated circuit.
X16	EP.0 652 696 A1	X16 through X18 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
X17	EP.0 656 696 A1	
X18	EP.0 662 259 B1	
X19	EP.442 608 A2	X19 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
X20	WO 94/12900	X20 and X21 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
X21	JP.1-237783	

Ref	Title	Distinction between reference(s) and claim(s)
Y1	JP.2-151084	Y1 through Y4 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
Y2	JP.2-181710	
Y3	JP.2-278212	
Y4	JP.2-87837	
Y5	JP.3-20458	Y5 through Y7 do not disclose, at least, an optical module comprising a laser diode module including
Y6	JP.3-94869	

Y7	JP.4-109593	a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
Y8	JP.4-122905	Y8 through Y10 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
Y9	JP.4-165312	
Y10	JP.4-211208	
Y11	JP.4-221207	Y11 through Y13 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
Y12	JP.4-229962	
Y13	JP.4-230978	
Y14	JP.4-234715	Y14 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
Y15	JP.4-270305	Y15 through Y18 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
Y16	JP.4-50901	
Y17	JP.4-87809	
Y18	JP.5-052802	
Y19	JP.5-134147	Y19 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.

Ref	Title	Distinction between reference(s) and claim(s)
Z1	JP.5-152607	Z1 and Z2 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
Z2	JP.5-188250	
Z3	JP.5-211379	Z3 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for

		transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
Z4	JP.5-218581	Z4 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
Z5	JP.5-290913	Z5 through Z8 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
Z6	JP.5-70955	
Z7	JP.61-158046	
Z8	JP.61-188385	
Z9	JP.63-009325	Z9 does not disclose, at least, an optical module comprising a sole circuit board to mount thereon a surface mount type connector, a laser diode driver, a laser diode module, a photo diode module and a semiconductor integrated circuit.
Z10	JP.63-16496	Z10 through Z19 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
Z11	JP.63-65967	
Z12	JP.63-65978	
Z13	JP.63-82998	
Z14	U-3-20458	
Z15	U-3-94869	
Z16	U-4-87809	
Z17	U-5-052802	
Z18	U-5-70955	
Z19	U-61-158046	

Ref	Title	Distinction between reference(s) and claim(s)
AA1	U-61-188385	AA1 through AA5 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
AA2	U-63-16496	
AA3	U-63-65967	
AA4	U-63-65978	
AA5	U-63-82998	

Ref	Title	Distinction between reference(s) and claim(s)
BB1	AT&T Microelectronics, "1408-Type ODL Transceiver"Feb. 1994 preliminary data sheet.p.2-10	BB1 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for

		transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
BB2	Ronald L.Soderstrom et al., "An optical Data Link using a CD laser", SPIE Vol.1577 High Speed Fiber Networks and Channels, pp.163-173, 1991	BB2 through BB4 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
BB3	BGP, Inc. "Gigabits Over Multimode Optical Fiber" no date	
BB4	Ronald L.Soderstrom et al., "CD laser optical Data Links for Workstation and Midrange Computers", IEEE p.505-509, 1993.	
BB5	FDDI Low-Cost Fiber Physical Layer Medium Dependent (LCF-PMD) Common Receiver Footprint, no date.	BB5 does not disclose, at least, an optical module comprising a sole circuit board to mount thereon a surface mount type connector, a laser diode driver, a laser diode module, a photo diode module and a semiconductor integrated circuit.
BB6	HP Module HFBR-5103, FDDI Data Sheet, <a href="http://www.hp.com/HP-COMP/fiber/hfbr5103.html">http://www.hp.com/HP-COMP/fiber/hfbr5103.html</a> , Jun. 11, 1998	BB6 and BB7 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
BB7	IBM Technical Disclosure Bulletin "Optical Link Card Guide/Retention System". <a href="http://www.patents.ibm.com/tbds/tdb?&amp;order=93A+60964">www.patents.ibm.com/tbds/tdb?&amp;order=93A+60964</a> , April 1993	
BB8	IBM, "A Proposal for a New High Performance... "Optoelectronics Enterprise Oct. 1992 ANSI Meeting, Oct. 13, 1992	BB8 and BB9 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
BB9	IBM, et al, "GLM Family", FCSI-301-Ren Sun, GLM, , , , , , FCSI-301-Rev1.0, Feb. 16, 1994.	
BB10	Method Electronics, Inc., "DM 1063-DBLM9 Copper Gigabit Link Module" data sheet. (no date)	BB10 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
BB11	"Raylan Joins Low-Wavelength Push -850 nm Transceiver", Electronic Engineering Times, Aug. 1993.	BB11 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.

Ref	Title	Distinction between reference(s) and claim(s)
CC1	Sumitomo Electric Fiber Optics Corp. "Transceiver Manufacturers to Support Common Footprint for Desktop FDDI Applications, " June 23, 1992.	CC1 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode

		optical signal having a data transmission rate of 1000 Mbits/s or more.
CC2	Sun Microsystems computer Co. et al., Gigabit Interface Converter (GBIC), Rev 4.4, Dec. 1, 1997	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
CC3	Siemens, "Who provides Low-Cost Transceivers for all Standards?" no date.	CC3 through CC5 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
CC4	AMP "PC Board Connectors", Product Guide 82759, pp. 7104-7108, Catalog E2750 issued Jun. 1991	
CC5	AMP Inc. "Lytel Molded-Optronic SC Duplex Transceiver" Catalog 65922, Dec. 1993.	
CC6	AMPHENOL Engineering News vol. 7 No. 6., pp241, 264-65, Nov. 1994	CC6 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
CC7	Baldwin and Kellerman, "Fiber Optic Module Interface Attachment" Research disclosure, Kenneth Mason Publications Ltd., England, Apr. 1991.	CC7 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
CC8	Block and Gaio "Optical Link Card guide/Retention Sys" RESEARCH DISCLOSURE Kenneth Mason Publications Ltd., England, Apr. 1993.	CC8 and CC9 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
CC9	Cinch Hinge Connectors Catalog CM-16, Jul. 1963.	
CC10	Martin H. Weik, "Communication Standard Dictionary" p.454. definition of LED, Van Nostrand Reinhold Co.	CC10 does not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
CC11	Edward R. Salmon, Encapsulation of Electronic Devices and Components, Marcel Dekker Inc., New York, 1987	CC11 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
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DD1	Dieter Gwinner,Conductive Coatings:Vacuum Evaporated Aluminum for Selective Shielding of Plastic Housings,no date.	DD1 through DD3 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
DD2	HEADS Up--Sumitomo Electric Lightwave joins Other in Announcement,May 11,1995	
DD3	Robert C. Herron,High Density Input/Output Connector Systems,3M Electronic Products Divisions,1990	
DD4	Shortwave Opto Assembly,IBM OptoElectronic Enterprises; IBM/OEE Market Survey Only, Rev.1,Jan.6,1993	DD4 and DD5 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
DD5	"Minimizing Electrostatic Discharge Damage to a Cartridge",IBM Technical Disclosure Bulletin, vol. 29 No. 10. Mar.,1987	
DD6	Japanese Standards Association " F04 Type Connectors for Optical Fiber Cords JIS C 5973"Japanese Standards Association,1990.	DD6 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
DD7	Ronald LSoderstrom et al.,A Miniaturized Fiber Optic Laser Receptacle Using a Compact Disk(CD)··· FOC/LAN'87&MFOC-WEST,pp.383-385,no date.	DD7 through DD9 do not disclose, at least, an optical module comprising a laser diode driver to convert serial data received through a surface mount type connector to a laser diode electrical signal for a laser diode.
DD8	"Transceiver Module Assembly", IBM Technical Disclosure Bulletin,Oct. 1979, <a href="https://www.delphion.com/tbds/tldb?o=79A+06370">https://www.delphion.com/tbds/tldb?o=79A+06370</a> ,last visited Mar.3,2005.	
DD9	Ronald L.Soderstrom et al.,Optical Components and Electronic Packaging for High Performance Optical Data Links,THE RESEARCH INVESTMENT,p.19-28(no date).	
DD10	Thomas & Betts INFO-LAN Modem 1998	DD10 does not disclose, at least, an optical module comprising a sole circuit board to mount thereon a surface mount type connector, a laser diode driver, a laser diode module, a photo diode module and a semiconductor integrated circuit.
DD11	"Active component manufacturers lower the cost of fiber to the desktop",Lightwave,Feb. 1994 pp.58,67.	DD11 does not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal, which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
EE1	Fibre Distributed Data Interface(FDDI)-Token Ring Low-Cost Fibre Physical Layer Medium Dependent (LCF-PMD),American National Standards Institute,1996.	EE1 through EE11 do not disclose, at least, an optical module comprising a laser diode module including a laser diode, to convert a laser diode electrical signal into a laser diode optical signal,
EE2	Communications Standard Dictionary; p.454,definition of inhomogeneous fiber,Van Nostrand Reinhold Publishing,1983	



EE3	"Transmitter/receiver assembly simplifies use of fibre optics", Design Engineering,p.19,Button Press,Ltd.,April 1980.	which adapted for transmission to an optical fiber the laser diode optical signal having a data transmission rate of 1000 Mbits/s or more.
EE4	Ronald L.Soderstrom et al., "CD laser as a fiber optic source for computer data links",Fiber Optic Datacom and Computer Networks,SPIE-The International Society for Optical Engineerings, Vol.1577,pp.174-181,1988	
EE5	David A.Knodel et al., "Open Fibre Control,a laser safety interlock technique",High-Speed Fiber Networks and Channels,SPIE-The International Society for Optical Engineering Proceedings, Vol.991,pp.179-182,1992	
EE6	"IBM Technical Disclosure Bulletin, Electrostatic Dissipative Enclosed Connector", Vol.34, No.7B, Dec.1991	
EE7	"High Reliability SW Laser For Optical Data Links", LEOS '93 Conference Proceedings, IEEE Lasers and Electro-Optics Society 1993 Annual Meeting;	
EE8	Minimizing Electrostatic Discharge to a Cartridge, IBM Technical Disclosure Bulletin, March 1987, <a href="https://www.delphion.com/tdb?o=87A%2060509">https://www.delphion.com/tdb?o=87A%2060509</a> , last visited Mar.8,2005.	
EE9	K.P.Jackson et al., "High-Density, Array, Optical Interconnects for Multi-Chip Module Conference MCMC-92 Proceedings, IEEE Computer Society Press.	
EE10	TDB:Stackable Circuit Card Packaging within a Logic Cage, IBM Technical Disclosure Bulletin, Dec.1992, <a href="https://www.delphion.com/tbds/tdb?o=92A%2063485">https://www.delphion.com/tbds/tdb?o=92A%2063485</a> , last visited Mar.8,2005	
EE11	Jeff Hechi, The Laser Guidebook, 2nd ed., McGraw Hill, Inc., 1992	

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Ref	Title	Distinction between reference(s) and claim(s)
A1	Re.32,502	A1 through A12 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
A2	USP2,899,669	
A3	USP3,264,601	
A4	USP3,332,860	
A5	USP3,474,380	
A6	USP3,497,866	
A7	USP3,523,269	
A8	USP3,670,290	
A9	USP3,673,545	
A10	USP3,706,869	
A11	USP3,737,729	
A12	USP3,790,923	
A13	USP3,792,284	A13 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
A14	USP3,805,116	A14 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
A15	USP3,809,908	A15 and A16 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
A16	USP3,976,877	

Ref	Title	Distinction between reference(s) and claim(s)
B1	USP3,990,761	B1 through B3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
B2	USP4,047,242	
B3	USP4,156,903	
B4	USP4,161,650	B4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
B5	USP4,167,303	B5 through B7 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
B6	USP4,176,897	
B7	USP4,217,019	
B8	USP4,217,488	B8 does not disclose, at least, an optical module

		comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
B9	USP4,226,491	B9 and B10 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
B10	USP4,234,968	
B11	USP4,249,266	B11 through B13 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
B12	USP4,252,402	
B13	USP4,257,124	
B14	USP4,268,756	B14 and B15 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
B15	USP4,273,413	
B16	USP4,276,656	B16 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
C1	USP4,294,682	C1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
C2	USP4,295,181	C2 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
C3	USP4,301,543	C3 and C4 do not disclose, at least, an optical module comprising a single circuit board, on which a laser diode electrical signal converter are mounted and to which a laser diode module and a photo diode module are electrically connected proximate to a first edge of the circuit board.
C4	USP4,330,870	
C5	USP4,345,808	C5 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
C6	USP4,347,655	C6 does not disclose, at least, an optical module comprising a single circuit board, on which a laser diode electrical signal converter are mounted and to

		which a laser diode module and a photo diode module are electrically connected proximate to a first edge of the circuit board.
C7	USP4,357,606	C7 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
C8	USP4,360,248	C8 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
C9	USP4,366,565	C9 does not disclose, at least, an optical module comprising a single circuit board, on which a laser diode electrical signal converter are mounted and to which a laser diode module and a photo diode module are electrically connected proximate to a first edge of the circuit board.
C10	USP4,369,494	C10 through C15 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
C11	USP4,380,360	
C12	USP4,388,671	
C13	USP4,393,516	
C14	USP4,398,073	
C15	USP4,398,780	
C16	USP4,399,563	C16 does not disclose, at least, an optical module comprising a single circuit board, on which a laser diode electrical signal converter are mounted and to which a laser diode module and a photo diode module are electrically connected proximate to a first edge of the circuit board.

Ref	Title	Distinction between reference(s) and claim(s)
D1	USP4,408,273	D1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
D2	USP4,422,088	D2 through D4 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
D3	USP4,427,879	
D4	USP4,430,699	
D5	USP4,434,537	D5 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
D6	USP4,437,190	D6 does not disclose, at least, an optical module

		comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
D7	USP4,439,006	D7 does not disclose, at least, an optical module comprising a single circuit board, on which a laser diode electrical signal converter are mounted and to which a laser diode module and a photo diode module are electrically connected proximate to a first edge of the circuit board.
D8	USP4,446,515	D8 and D9 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
D9	USP4,449,244	
D10	USP4,449,784	D10 through D13 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
D11	USP4,453,903	
D12	USP4,459,658	
D13	USP4,461,537	
D14	USP4,470,154	D14 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
D15	USP4,486,059	D15 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
D16	USP4,493,113	D16 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
E1	USP4,501,021	E1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
E2	USP4,502,130	E2 through E5 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
E3	USP4,505,035	
E4	USP4,506,937	
E5	USP4,510,553	
E6	USP4,511,207	E6 does not disclose, at least, an optical module comprising a single circuit board, on which a laser diode electrical signal converter are mounted and to

		which a laser diode module and a photo diode module are electrically connected proximate to a first edge of the circuit board.
E7	USP4,514,586	E7 through E14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
E8	USP4,516,204	
E9	USP4,519,670	
E10	USP4,519,672	
E11	USP4,519,673	
E12	USP4,522,463	
E13	USP4,526,438	
E14	USP4,526,986	
E15	USP4,527,286	E15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
E16	USP4,529,266	E16 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
F1	USP4,530,566	F1 through F3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
F2	USP4,531,810	
F3	USP4,533,208	
F4	USP4,533,209	F4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
F5	USP4,534,616	F5 through F8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
F6	USP4,534,617	
F7	USP4,535,233	
F8	USP4,537,468	
F9	USP4,539,476	F9 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
F10	USP4,540,237	F10 through F16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
F11	USP4,540,246	
F12	USP4,541,036	
F13	USP4,541,685	
F14	USP4,542,076	
F15	USP4,544,231	

F16	USP4,544,233	
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Ref	Title	Distinction between reference(s) and claim(s)
G1	USP4,544,234	G1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
G2	USP4,545,074	G2 through G3 do not disclose, at least, an optical module comprising a single circuit board, on which a laser diode electrical signal converter are mounted and to which a laser diode module and a photo diode module are electrically connected proximate to a first edge of the circuit board.
G3	USP4,545,077	
G4	USP4,545,642	G4 through G8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
G5	USP4,545,643	
G6	USP4,545,644	
G7	USP4,545,645	
G8	USP4,548,465	
G9	USP4,548,466	G9 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
G10	USP4,548,467	G10 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
G11	USP4,549,782	G11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
G12	USP4,549,783	G12 through G14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
G13	USP4,550,975	
G14	USP4,553,811	
G15	USP4,553,813	G15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
G16	USP4,553,814	G16 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
H1	USP4,556,279	H1 through H10 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
H2	USP4,556,281	
H3	USP4,556,282	
H4	USP4,557,551	
H5	USP4,560,234	
H6	USP4,563,057	
H7	USP4,566,753	
H8	USP4,568,145	
H9	USP4,569,569	
H10	USP4,573,760	
H11	USP4,580,295	H11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
H12	USP4,580,872	H12 through H16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
H13	USP4,588,256	
H14	USP4,589,728	
H15	USP4,597,631	
H16	USP4,614,836	

Ref	Title	Distinction between reference(s) and claim(s)
I1	USP4,629,270	I1 and I2 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
I2	USP4,634,239	
I3	USP4,641,371	I3 does not disclose, at least, an optical module comprising a single circuit board, on which a laser diode electrical signal converter are mounted and to which a laser diode module and a photo diode module are electrically connected proximate to a first edge of the circuit board.
I4	USP4,647,148	I4 through I16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
I5	USP4,652,976	
I6	USP4,663,240	
I7	USP4,663,603	
I8	USP4,678,264	
I9	USP4,679,883	
I10	USP4,695,106	
I11	USP4,697,864	
I12	USP4,708,433	
I13	USP4,715,675	



I14	USP4,720,630	
I15	USP4,722,584	
I16	USP4,736,100	

Ref	Title	Distinction between reference(s) and claim(s)
J1	USP4,756,593	J1 through J15 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
J2	USP4,762,388	
J3	USP4,767,179	
J4	USP4,772,931	
J5	USP4,779,952	
J6	USP4,789,218	
J7	USP4,798,430	
J8	USP4,798,440	
J9	USP4,807,006	
J10	USP4,807,955	
J11	USP4,808,115	
J12	USP4,811,165	
J13	USP4,812,133	
J14	USP4,821,145	
J15	USP4,823,235	
J16	USP4,838,630	J16 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
K1	USP4,840,451	K1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
K2	USP4,844,581	K2 does not disclose, at least, an optical module comprising a single circuit board, on which a laser diode electrical signal converter are mounted and to which a laser diode module and a photo diode module are electrically connected proximate to a first edge of the circuit board.
K3	USP4,847,711	K3 through K9 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
K4	USP4,847,771	
K5	USP4,849,944	
K6	USP4,857,002	
K7	USP4,862,327	
K8	USP4,872,212	
K9	USP4,872,736	

K10	USP4,881,789	K10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
K11	USP4,884,336	K11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
K12	USP4,897,711	K12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
K13	USP4,906,197	K13 through K16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
K14	USP4,927,225	
K15	USP4,944,568	
K16	USP4,945,448	

Ref	Title	Distinction between reference(s) and claim(s)
L1	USP4,953,929	L1 through L4 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
L2	USP4,955,817	
L3	USP4,963,104	
L4	USP4,967,312	
L5	USP4,977,329	L5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
L6	USP4,979,793	L6 and L7 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
L7	USP4,979,794	
L8	USP4,986,625	L8 and L9 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
L9	USP4,989,934	
L10	USP4,990,104	L10 through L16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
L11	USP4,991,062	
L12	USP5,002,495	
L13	USP5,004,434	
L14	USP5,006,286	
L15	USP5,011,425	
L16	USP5,029,254	

Ref	Title	Distinction between reference(s) and claim(s)
M1	USP5,035,482	M1 through M4 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
M2	USP5,035,641	
M3	USP5,040,993	
M4	USP5,041,025	
M5	USP5,043,775	M5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
M6	USP5,044,982	M6 through M14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
M7	USP5,045,635	
M8	USP5,045,971	
M9	USP5,046,955	
M10	USP5,060,373	
M11	USP5,071,219	
M12	USP5,076,656	
M13	USP5,076,688	
M14	USP5,082,344	
M15	USP5,084,802	M15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
M16	USP5,086,422	M16 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
N1	USP5,091,991	N1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
N2	USP5,093,879	N2 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
N3	USP5,094,623	N3 through N8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
N4	USP5,101,463	
N5	USP5,104,243	
N6	USP5,107,404	
N7	USP5,108,294	
N8	USP5,109,453	

N9	USP5,113,467	N9 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
N10	USP5,116,239	N10 through N14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
N11	USP5,117,476	
N12	USP5,118,362	
N13	USP5,118,904	
N14	USP5,120,578	
N15	USP5,122,893	N15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
N16	USP5,124,885	N16 and N17 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
N17	USP5,125,849	
N18	USP5,127,071	N18 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
N19	USP5,132,871	N19 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
O1	USP5,134,677	O1 through O3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
O2	USP5,134,679	
O3	USP5,136,063	
O4	USP5,136,152	O4 and O5 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
O5	USP5,136,603	
O6	USP5,138,537	O6 through O8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
O7	USP5,138,678	
O8	USP5,140,663	
O9	USP5,155,786	O9 and O10 do not disclose, at least, an optical

O10	USP5,157,769	module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
O11	USP5,167,139	O11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
O12	USP5,168,537	O12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
O13	USP5,170,146	O13 through O17 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
O14	USP5,171,167	
O15	USP5,173,059	
O16	USP5,183,404	
O17	USP5,183,405	

Ref	Title	Distinction between reference(s) and claim(s)
P1	USP5,195,911	P1 through P4 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
P2	USP5,202,536	
P3	USP5,207,597	
P4	USP5,212,752	
P5	USP5,212,754	P5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
P6	USP5,218,519	P6 through P11 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
P7	USP5,225,760	
P8	USP5,233,676	
P9	USP5,233,674	
P10	USP5,234,353	
P11	USP5,238,426	
P12	USP5,241,614	P12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
P13	USP5,247,532	P13 does not disclose, at least, an optical module comprising a single circuit board, on which a laser diode electrical signal converter are mounted and to which a laser diode module and a photo diode module are electrically connected proximate to a first edge of the circuit board.
P14	USP5,259,052	P14 through P16 do not disclose, at least, an optical

P15	USP5,259,054	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
P16	USP5,262,923	
P17	USP5,271,079	P17 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
Q1	USP5,274,729	Q1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
Q2	USP5,285,466	Q2 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
Q3	USP5,285,511	Q3 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
Q4	USP5,285,512	Q4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
Q5	USP5,286,207	Q5 through Q16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
Q6	USP5,286,247	
Q7	USP5,288,247	
Q8	USP5,289,347	
Q9	USP5,296,813	
Q10	USP5,299,089	
Q11	USP5,304,069	
Q12	USP5,305,182	
Q13	USP5,311,408	
Q14	USP5,315,679	
Q15	USP5,317,663	
Q16	USP5,321,819	

Ref	Title	Distinction between reference(s) and claim(s)
R1	USP5,329,604	R1 through R3 do not disclose, at least, an optical module comprising a laser diode module to convert
R2	USP5,333,221	

R3	USP5,333,225	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
R4	USP5,337,391	R4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
R5	USP5,337,396	R5 and R6 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
R6	USP5,340,340	
R7	USP5,345,524	R7 and R8 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
R8	USP5,345,530	
R9	USP5,353,364	R9 does not disclose, at least, an optical module comprising a single circuit board, on which a laser diode electrical signal converter are mounted and to which a laser diode module and a photo diode module are electrically connected proximate to a first edge of the circuit board.
R10	USP5,353,634	R10 through R12 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
R11	USP5,356,300	
R12	USP5,357,402	
R13	USP5,361,244	R13 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
R14	USP5,361,318	R14 through R16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
R15	USP5,366,664	
R16	USP5,372,515	

Ref	Title	Distinction between reference(s) and claim(s)
S1	USP5,375,040	S1 through S9 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
S2	USP5,383,793	
S3	USP5,388,995	
S4	USP5,390,268	
S5	USP5,393,249	
S6	USP5,397,242	

S7	USP5,398,154	
S8	USP5,398,295	
S9	USP5,408,384	
S10	USP5,414,787	S10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
S11	USP5,416,668	S11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
S12	USP5,416,870	S12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
S13	USP5,416,872	S13 through S16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
S14	USP5,419,717	
S15	USP5,424,573	
S16	USP5,428,703	

Ref	Title	Distinction between reference(s) and claim(s)
T1	USP5,428,704	T1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
T2	USP5,434,747	T2 and T3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
T3	USP5,443,390	
T4	USP5,446,814	T4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
T5	USP5,452,387	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T6	USP5,454,080	T6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
T7	USP5,455,703	T7 does not disclose, at least, an optical module comprising a laser diode electrical signal converter



		to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
T8	USP5,463,532	T8 and T9 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
T9	USP5,469,332	
T10	USP5,470,257	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T11	USP5,470,259	
T12	USP5,475,734	T12 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
T13	USP5,477,418	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T14	USP5,478,253	
T15	USP5,478,259	T15 and T16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
T16	USP5,478,260	

Ref	Title	Distinction between reference(s) and claim(s)
U1	USP5,481,634	U1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
U2	USP5,482,658	U2 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
U3	USP5,487,678	U3 and U4 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
U4	USP5,491,613	
U5	USP5,491,712	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U6	USP5,494,747	U6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser

		diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
U7	USP5,499,311	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U8	USP5,499,312	U8 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
U9	USP5,504,657	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U10	USP5,506,921	U10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
U11	USP5,506,922	U11 through U14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
U12	USP5,507,668	
U13	USP5,526,235	
U14	USP5,527,991	
U15	USP5,534,662	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U16	USP5,535,296	

Ref	Title	Distinction between reference(s) and claim(s)
V1	USP5,535,364	V1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
V2	USP5,545,845	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V3	USP5,546,281	
V4	USP5,547,385	
V5	USP5,548,641	V5 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
V6	USP5,548,677	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

V7	USP5,554,031	V7 through V9 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
V8	USP5,554,037	
V9	USP5,567,167	
V10	USP5,577,064	V10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
V11	USP5,580,269	V11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
V12	USP5,588,850	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V13	USP5,598,319	V13 and V14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
V14	USP5,599,595	
V15	USP5,600,470	V15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
V16	USP5,613,860	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
W1	USP5,629,919	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
W2	USP5,631,998	
W3	USP5,653,596	
W4	USP5,659,459	W4 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
W5	USP5,675,428	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
W6	USP5,687,267	
W7	USP5,717,533	
W8	USP5,724,729	
W9	USP5,726,864	

W10	USP5,734,558	
W11	USP5,736,782	
W12	USP5,747,735	
W13	USP5,767,999	
W14	USP5,779,504	
W15	USP5,797,771	
W16	USP5,836,774	

Ref	Title	Distinction between reference(s) and claim(s)
X1	USP5,864,468	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
X2	USP5,879,173	
X3	DE.4239124 A1	X3 through X6 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
X4	EP 0 232792 A1	
X5	EP.0 228 278	
X6	EP.0 305112 A2	
X7	EP.0 314 651 A2	X7 and X8 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
X8	EP.0 413 489 A2	
X9	EP.0 437 161 A2	X9 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
X10	EP.0 456 298 B1	X10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
X11	EP.0 530 791 A2	X11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
X12	EP.0 535 473 A1	X12 through X14 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
X13	EP.0 588 014 A2	
X14	EP.0 600 645 A1	
X15	EP.0 613 032 A2	X15 does not disclose, at least, an optical module comprising a single circuit board, on which a laser diode electrical signal converter are mounted and to which a laser diode module and a photo diode module are electrically connected proximate to a

		first edge of the circuit board.
X16	EP.0 652 696 A1	X16 through X18 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
X17	EP.0 656 696 A1	
X18	EP.0 662 259 B1	
X19	EP.442 608 A2	X19 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
X20	WO 94/12900	X20 and X21 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
X21	JP.1-237783	

Ref	Title	Distinction between reference(s) and claim(s)
Y1	JP.2-151084	Y1 through Y4 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
Y2	JP.2-181710	
Y3	JP.2-278212	
Y4	JP.2-87837	
Y5	JP.3-20458	Y5 through Y7 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
Y6	JP.3-94869	
Y7	JP.4-109593	
Y8	JP.4-122905	Y8 through Y10 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
Y9	JP.4-165312	
Y10	JP.4-211208	
Y11	JP.4-221207	Y11 through Y13 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
Y12	JP.4-229962	
Y13	JP.4-230978	
Y14	JP.4-234715	Y14 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
Y15	JP.4-270305	Y15 through Y18 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser
Y16	JP.4-50901	
Y17	JP.4-87809	

Y18	JP.5-052802	diode optical signal and transmit the laser diode optical signal.
Y19	JP.5-134147	Y19 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
Z1	JP.5-152607	Z1 and Z2 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
Z2	JP.5-188250	
Z3	JP.5-211379	Z3 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
Z4	JP.5-218581	Z4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
Z5	JP.5-290913	Z5 through Z8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
Z6	JP.5-70955	
Z7	JP.61-158046	
Z8	JP.61-188385	
Z9	JP.63-009325	Z9 does not disclose, at least, an optical module comprising a single circuit board, on which a laser diode electrical signal converter are mounted and to which a laser diode module and a photo diode module are electrically connected proximate to a first edge of the circuit board.
Z10	JP.63-16496	Z10 through Z19 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
Z11	JP.63-65967	
Z12	JP.63-65978	
Z13	JP.63-82998	
Z14	U-3-20458	
Z15	U-3-94869	
Z16	U-4-87809	
Z17	U-5-052802	
Z18	U-5-70955	
Z19	U-61-158046	

Ref	Title	Distinction between reference(s) and claim(s)
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AA1	U-61-188385	AA1 through AA5 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
AA2	U-63-16496	
AA3	U-63-65967	
AA4	U-63-65978	
AA5	U-63-82998	

Ref	Title	Distinction between reference(s) and claim(s)
BB1	AT&T Microelectronics, "1408-Type ODL Transceiver"Feb. 1994 preliminary data sheet.p.2-10	BB1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
BB2	Ronald LSoderstrom et al., "An optical Data Link using a CD laser", SPIE Vol.1577 High Speed Fiber Networks and Channels,pp.163-173,1991	BB2 through BB4 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
BB3	BCP, Inc. "Gigabits Over Multimode Optical Fiber"no date	
BB4	Ronald L.Soderstrom et al., "CD laser optical Data Links for Workstation and Midrange Computers", IEEE p.505-509,1993.	
BB5	FDDI Low-Cost Fiber Physical Layer Medium Dependent (LCF-PMD) Common Receiver Footprint,no date.	BB5 does not disclose, at least, an optical module comprising a single circuit board, on which a laser diode electrical signal converter are mounted and to which a laser diode module and a photo diode module are electrically connected proximate to a first edge of the circuit board.
BB6	HP Module HFBR-5103, FDDI Data Sheet, <a href="http://www.hp.com/HP-COMP/fiber/hfbr5103.html">http://www.hp.com/HP-COMP/fiber/hfbr5103.html</a> ,Jun.11,1998	BB6 and BB7 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
BB7	IBM Technical Disclosure Bulletin "Optical Link Card Guide/Retention System". <a href="http://www.patents.ibm.com/tlbs/tdb?&amp;order=93A+60964">www.patents.ibm.com/tlbs/tdb?&amp;order=93A+60964</a> ,April 1993	
BB8	IBM, "A Proposal for a New High Performance..."Optoelectronics Enterprise Oct.1992 ANSI Meeting,Oct.13,1992	BB8 and BB9 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
BB9	IBM, et al,"GLM Family",FCSI-301-Ren Sun, GLM, ,,,,,, FCSI-301-Rev1.0, Feb. 16, 1994.	
BB10	Methode Electronics, Inc., "DM 1063-DBLM9 Copper Gigabit Link Module" data sheet.(no date)	BB10 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
BB11	"Raylan Joins Low-Wavelength Push -850 nm Transceiver",Electronic Engineering Times,Aug.1993.	BB11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
CC1	Sumitomo Electric Fiber Optics Corp. "Transceiver Manufacturers to Support Common Footprint for Desktop FDDI Applications," June 23, 1992.	CC1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser

		diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
CC2	Sun Microsystems computer Co. et al., Gigabit Interface Converter (GBIC), Rev 4.4, Dec. 1, 1997	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
CC3	Siemens, "Who provides Low-Cost Transceivers for all Standards?" no date.	CC3 through CC5 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
CC4	AMP "PC Board Connectors", Product Guide 82759, pp. 7104-7108, Catalog E2750 issued Jun. 1991	
CC5	AMP Inc. "Lytel Molded-Optronic SC Duplex Transceiver" Catalog 65922, Dec. 1993.	
CC6	AMPHENOL Engineering News vol. 7 No. 6., pp241, 264-65, Nov. 1994	CC6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
CC7	Baldwin and Kellerman, "Fiber Optic Module Interface Attachment" Research disclosure, Kenneth Mason Publications Ltd., England, Apr. 1991.	CC7 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
CC8	Block and Gaio "Optical Link Card guide/Retention Sys" RESEARCH DISCLOSURE Kenneth Mason Publications Ltd., England, Apr. 1993.	CC8 and CC9 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
CC9	Cinch Hinge Connectors Catalog CM-16, Jul. 1963.	
CC10	Martin H. Weik, "Communication Standard Dictionary" p.454. definition of LED, Van Nostrand Reinhold Co.	CC10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
CC11	Edward R. Salmon, Encapsulation of Electronic Devices and Components, Marcel Dekker Inc., New York, 1987	CC11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
DD1	Dieter Gwinner, Conductive Coatings: Vacuum Evaporated Aluminum for Selective Shielding of Plastic Housings, no date.	DD1 through DD3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
DD2	HEADS Up--Sumitomo Electric Lightwave joins Other in Announcement, May 11, 1995	
DD3	Robert C. Herron, High Density Input/Output Connector Systems, 3M Electronic Products Divisions, 1990	
DD4	Shortwave Opto Assembly, IBM OptoElectronic Enterprises; IBM/OEE Market Survey Only, Rev. 1, Jan. 6, 1993	DD4 and DD5 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
DD5	"Minimizing Electrostatic Discharge Damage to a Cartridge", IBM Technical Disclosure Bulletin, vol. 29 No. 10. Mar., 1987	
DD6	Japanese Standards Association " F04 Type	DD6 does not disclose, at least, an optical module



	Connectors for Optical Fiber Cords JIS C 5973 "Japanese Standards Association, 1990.	comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
DD7	Ronald L.Soderstrom et al.,A Miniaturized Fiber Optic Laser Receptacle Using a Compact Disk(CD)··· FOC/LAN '87&MFOC-WEST,pp.383-385,no date.	DD7 through DD9 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
DD8	"Transceiver Module Assembly", IBM Technical Disclosure Bulletin,Oct. 1979,https://www.delphion.com/tbds/tdb?o=79A+06370,last visited Mar.3,2005.	
DD9	Ronald L.Soderstrom et al.,Optical Components and Electronic Packaging for High Performance Optical Data Links,THE RESEARCH INVESTMENT,p.19-28(no date).	
DD10	Thomas & Betts INFO-LAN Modem 1998	DD10 does not disclose, at least, an optical module comprising a single circuit board, on which a laser diode electrical signal converter are mounted and to which a laser diode module and a photo diode module are electrically connected proximate to a first edge of the circuit board.
DD11	"Active component manufacturers lower the cost of fiber to the desktop",Lightwave,Feb. 1994 pp.58,67.	DD11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
EE1	Fibre Distributed Date Interface(FDDI)-Token Ring Low-Cost Fibre Physical Layer Medium Dependent (LCF-PMD),American National Standards Institute, 1996.	EE1 through EE11 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
EE2	Communications Standard Dictionary; p.454,definition of inhomogeneous fiber,Van Nostrand Reinhold Publishing,1983	
EE3	"Transmitter/receiver assembly simplifies use of fibre optics", Design Engineering,p.19,Button Press,Ltd.,April 1980.	
EE4	Ronald L.Soderstrom et al., "CD laser as a fiber optic source for computer date links",Fiber Optic Datacom and Computer Networks,SPIE-The International Society for Optical Engineerings,Vol.1577,pp.174-181,1988	
EE5	David A.Knodel et al., "Open Fibre Control,a laser safety interlock technique",High-Speed Fiber Networks and Channels,SPIE-The International Society for Optical Engineering Proceedings,Vol.991,pp.179-182,1992	
EE6	"IBM Technical Disclosure Bulletin, Electrostatic Dissipative Enclosed Connector",Vol.34,No.7B,Dec.1991	
EE7	"High Reliability SW Laser For Optical Data Links", LEOS '93 Conference Proceedings, IEEE Lasers and Electro-Optics Society 1993 Annual Meeting;	
EE8	Minimizing Electrostatic Discharge to a Cartridge,IBM Technical Disclosure Bulletin,March 1987,https://www.delphion.com/tdb?o=87A%2060509 ,last visited Mar.8,2005.	

EE9	K.P.Jackson et al., "High-Density, Array, Optical Interconnects for Multi-Chip Module Conference MCMC-92 Proceedings, IEEE Computer Society Press.	
EE10	TDB: Stackable Circuit Card Packaging within a Logic Cage, IBM Technical Disclosure Bulletin, Dec. 1992, <a href="https://www.delphion.com/tbds/tdb?o=92A%2063485">https://www.delphion.com/tbds/tdb?o=92A%2063485</a> , last visited Mar. 8, 2005	
EE11	Jeff Hechi, The Laser Guidebook, 2nd ed., McGraw Hill, Inc., 1992	

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Ref	Title	Distinction between reference(s) and claim(s)
A1	Re.32,502	A1 through A16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, and being removably attachable to an optical module.
A2	USP2,899,669	
A3	USP3,264,601	
A4	USP3,332,860	
A5	USP3,474,380	
A6	USP3,497,866	
A7	USP3,523,269	
A8	USP3,670,290	
A9	USP3,673,545	
A10	USP3,706,869	
A11	USP3,737,729	
A12	USP3,790,923	
A13	USP3,792,284	
A14	USP3,805,116	
A15	USP3,809,908	
A16	USP3,976,877	

Ref	Title	Distinction between reference(s) and claim(s)
B1	USP3,990,761	B1 through B16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, and being removably attachable to an optical module.
B2	USP4,047,242	
B3	USP4,156,903	
B4	USP4,161,650	
B5	USP4,167,303	
B6	USP4,176,897	
B7	USP4,217,019	
B8	USP4,217,488	
B9	USP4,226,491	
B10	USP4,234,968	
B11	USP4,249,266	
B12	USP4,252,402	
B13	USP4,257,124	
B14	USP4,268,756	
B15	USP4,273,413	
B16	USP4,276,656	

Ref	Title	Distinction between reference(s) and claim(s)
C1	USP4,294,682	C1 through C16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, and being removably
C2	USP4,295,181	
C3	USP4,301,543	
C4	USP4,330,870	

C5	USP4,345,808	attachable to an optical module.
C6	USP4,347,655	
C7	USP4,357,606	
C8	USP4,360,248	
C9	USP4,366,565	
C10	USP4,369,494	
C11	USP4,380,360	
C12	USP4,388,671	
C13	USP4,393,516	
C14	USP4,398,073	
C15	USP4,398,780	
C16	USP4,399,563	

Ref	Title	Distinction between reference(s) and claim(s)
D1	USP4,408,273	D1 through D16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, and being removably attachable to an optical module.
D2	USP4,422,088	
D3	USP4,427,879	
D4	USP4,430,699	
D5	USP4,434,537	
D6	USP4,437,190	
D7	USP4,439,006	
D8	USP4,446,515	
D9	USP4,449,244	
D10	USP4,449,784	
D11	USP4,453,903	
D12	USP4,459,658	
D13	USP4,461,537	
D14	USP4,470,154	
D15	USP4,486,059	
D16	USP4,493,113	

Ref	Title	Distinction between reference(s) and claim(s)
E1	USP4,501,021	E1 through E16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, and being removably attachable to an optical module.
E2	USP4,502,130	
E3	USP4,505,035	
E4	USP4,506,937	
E5	USP4,510,553	
E6	USP4,511,207	
E7	USP4,514,586	
E8	USP4,516,204	
E9	USP4,519,670	
E10	USP4,519,672	
E11	USP4,519,673	

E12	USP4,522,463	
E13	USP4,526,438	
E14	USP4,526,986	
E15	USP4,527,286	
E16	USP4,529,266	

Ref	Title	Distinction between reference(s) and claim(s)
F1	USP4,530,566	F1 through F16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, and being removably attachable to an optical module.
F2	USP4,531,810	
F3	USP4,533,208	
F4	USP4,533,209	
F5	USP4,534,616	
F6	USP4,534,617	
F7	USP4,535,233	
F8	USP4,537,468	
F9	USP4,539,476	
F10	USP4,540,237	
F11	USP4,540,246	
F12	USP4,541,036	
F13	USP4,541,685	
F14	USP4,542,076	
F15	USP4,544,231	
F16	USP4,544,233	

Ref	Title	Distinction between reference(s) and claim(s)
G1	USP4,544,234	G1 through G16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, and being removably attachable to an optical module.
G2	USP4,545,074	
G3	USP4,545,077	
G4	USP4,545,642	
G5	USP4,545,643	
G6	USP4,545,644	
G7	USP4,545,645	
G8	USP4,548,465	
G9	USP4,548,466	
G10	USP4,548,467	
G11	USP4,549,782	
G12	USP4,549,783	
G13	USP4,550,975	
G14	USP4,553,811	
G15	USP4,553,813	
G16	USP4,553,814	

Ref	Title	Distinction between reference(s) and claim(s)
H1	USP4,556,279	H1 through H16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, and being removably attachable to an optical module.
H2	USP4,556,281	
H3	USP4,556,282	
H4	USP4,557,551	
H5	USP4,560,234	
H6	USP4,563,057	
H7	USP4,566,753	
H8	USP4,568,145	
H9	USP4,569,569	
H10	USP4,573,760	
H11	USP4,580,295	
H12	USP4,580,872	
H13	USP4,588,256	
H14	USP4,589,728	
H15	USP4,597,631	
H16	USP4,614,836	

Ref	Title	Distinction between reference(s) and claim(s)
I1	USP4,629,270	I1 through I16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, and being removably attachable to an optical module.
I2	USP4,634,239	
I3	USP4,641,371	
I4	USP4,647,148	
I5	USP4,652,976	
I6	USP4,663,240	
I7	USP4,663,603	
I8	USP4,678,264	
I9	USP4,679,883	
I10	USP4,695,106	
I11	USP4,697,864	
I12	USP4,708,433	
I13	USP4,715,675	
I14	USP4,720,630	
I15	USP4,722,584	
I16	USP4,736,100	

Ref	Title	Distinction between reference(s) and claim(s)
J1	USP4,756,593	J1 through J16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, and being removably attachable to an optical module.
J2	USP4,762,388	
J3	USP4,767,179	
J4	USP4,772,931	
J5	USP4,779,952	
J6	USP4,789,218	

J7	USP4,798,430	
J8	USP4,798,440	
J9	USP4,807,006	
J10	USP4,807,955	
J11	USP4,808,115	
J12	USP4,811,165	
J13	USP4,812,133	
J14	USP4,821,145	
J15	USP4,823,235	
J16	USP4,838,630	

Ref	Title	Distinction between reference(s) and claim(s)
K1	USP4,840,451	K1 through K16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, and being removably attachable to an optical module.
K2	USP4,844,581	
K3	USP4,847,711	
K4	USP4,847,771	
K5	USP4,849,944	
K6	USP4,857,002	
K7	USP4,862,327	
K8	USP4,872,212	
K9	USP4,872,736	
K10	USP4,881,789	
K11	USP4,884,336	
K12	USP4,897,711	
K13	USP4,906,197	
K14	USP4,927,225	
K15	USP4,944,568	
K16	USP4,945,448	

Ref	Title	Distinction between reference(s) and claim(s)
L1	USP4,953,929	L1 through L16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, and being removably attachable to an optical module.
L2	USP4,955,817	
L3	USP4,963,104	
L4	USP4,967,312	
L5	USP4,977,329	
L6	USP4,979,793	
L7	USP4,979,794	
L8	USP4,986,625	
L9	USP4,989,934	
L10	USP4,990,104	
L11	USP4,991,062	
L12	USP5,002,495	
L13	USP5,004,434	

L14	USP5,006,286	
L15	USP5,011,425	
L16	USP5,029,254	

Ref	Title	Distinction between reference(s) and claim(s)
M1	USP5,035,482	M1 through M16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, and being removably attachable to an optical module.
M2	USP5,035,641	
M3	USP5,040,993	
M4	USP5,041,025	
M5	USP5,043,775	
M6	USP5,044,982	
M7	USP5,045,635	
M8	USP5,045,971	
M9	USP5,046,955	
M10	USP5,060,373	
M11	USP5,071,219	
M12	USP5,076,656	
M13	USP5,076,688	
M14	USP5,082,344	
M15	USP5,084,802	
M16	USP5,086,422	

Ref	Title	Distinction between reference(s) and claim(s)
N1	USP5,091,991	N1 through N19 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, and being removably attachable to an optical module.
N2	USP5,093,879	
N3	USP5,094,623	
N4	USP5,101,463	
N5	USP5,104,243	
N6	USP5,107,404	
N7	USP5,108,294	
N8	USP5,109,453	
N9	USP5,113,467	
N10	USP5,116,239	
N11	USP5,117,476	
N12	USP5,118,362	
N13	USP5,118,904	
N14	USP5,120,578	
N15	USP5,122,893	
N16	USP5,124,885	
N17	USP5,125,849	
N18	USP5,127,071	
N19	USP5,132,871	



Ref	Title	Distinction between reference(s) and claim(s)
O1	USP5,134,677	O1 through O17 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, and being removably attachable to an optical module.
O2	USP5,134,679	
O3	USP5,136,063	
O4	USP5,136,152	
O5	USP5,136,603	
O6	USP5,138,537	
O7	USP5,138,678	
O8	USP5,140,663	
O9	USP5,155,786	
O10	USP5,157,769	
O11	USP5,167,139	
O12	USP5,168,537	
O13	USP5,170,146	
O14	USP5,171,167	
O15	USP5,173,059	
O16	USP5,183,404	
O17	USP5,183,405	

Ref	Title	Distinction between reference(s) and claim(s)
P1	USP5,195,911	P1 through P17 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, and being removably attachable to an optical module.
P2	USP5,202,536	
P3	USP5,207,597	
P4	USP5,212,752	
P5	USP5,212,754	
P6	USP5,218,519	
P7	USP5,225,760	
P8	USP5,233,676	
P9	USP5,233,674	
P10	USP5,234,353	
P11	USP5,238,426	
P12	USP5,241,614	
P13	USP5,247,532	
P14	USP5,259,052	
P15	USP5,259,054	
P16	USP5,262,923	
P17	USP5,271,079	

Ref	Title	Distinction between reference(s) and claim(s)
Q1	USP5,274,729	Q1 through Q16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a
Q2	USP5,285,466	
Q3	USP5,285,511	

Q4	USP5,285,512	photo diode module, and being removably attachable to an optical module.
Q5	USP5,286,207	
Q6	USP5,286,247	
Q7	USP5,288,247	
Q8	USP5,289,347	
Q9	USP5,296,813	
Q10	USP5,299,089	
Q11	USP5,304,069	
Q12	USP5,305,182	
Q13	USP5,311,408	
Q14	USP5,315,679	
Q15	USP5,317,663	
Q16	USP5,321,819	

Ref	Title	Distinction between reference(s) and claim(s)
R1	USP5,329,604	R1 through R16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, and being removably attachable to an optical module.
R2	USP5,333,221	
R3	USP5,333,225	
R4	USP5,337,391	
R5	USP5,337,396	
R6	USP5,340,340	
R7	USP5,345,524	
R8	USP5,345,530	
R9	USP5,353,364	
R10	USP5,353,634	
R11	USP5,356,300	
R12	USP5,357,402	
R13	USP5,361,244	
R14	USP5,361,318	
R15	USP5,366,664	
R16	USP5,372,515	

Ref	Title	Distinction between reference(s) and claim(s)
S1	USP5,375,040	S1 through S16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, and being removably attachable to an optical module.
S2	USP5,383,793	
S3	USP5,388,995	
S4	USP5,390,268	
S5	USP5,393,249	
S6	USP5,397,242	
S7	USP5,398,154	
S8	USP5,398,295	
S9	USP5,408,384	
S10	USP5,414,787	

S11	USP5,416,668	
S12	USP5,416,870	
S13	USP5,416,872	
S14	USP5,419,717	
S15	USP5,424,573	
S16	USP5,428,703	

Ref	Title	Distinction between reference(s) and claim(s)
T1	USP5,428,704	T1 through T4 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, and being removably attachable to an optical module.
T2	USP5,434,747	
T3	USP5,443,390	
T4	USP5,446,814	
T5	USP5,452,387	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T6	USP5,454,080	T6 through T9 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, and being removably attachable to an optical module.
T7	USP5,455,703	
T8	USP5,463,532	
T9	USP5,469,332	
T10	USP5,470,257	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T11	USP5,470,259	
T12	USP5,475,734	T12 does not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, and being removably attachable to an optical module.
T13	USP5,477,418	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T14	USP5,478,253	
T15	USP5,478,259	T15 and T16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, and being removably attachable to an optical module.
T16	USP5,478,260	

Ref	Title	Distinction between reference(s) and claim(s)
U1	USP5,481,634	U1 through U4 do not disclose, at least, a module cap comprising a first elastic part to protect a laser
U2	USP5,482,658	

U3	USP5,487,678	diode module and a second elastic part to protect a photo diode module, and being removably attachable to an optical module.
U4	USP5,491,613	
U5	USP5,491,712	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U6	USP5,494,747	U6 does not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, and being removably attachable to an optical module.
U7	USP5,499,311	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U8	USP5,499,312	U8 does not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, and being removably attachable to an optical module.
U9	USP5,504,657	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U10	USP5,506,921	U10 through U14 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, and being removably attachable to an optical module.
U11	USP5,506,922	
U12	USP5,507,668	
U13	USP5,526,235	
U14	USP5,527,991	
U15	USP5,534,662	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U16	USP5,535,296	

Ref	Title	Distinction between reference(s) and claim(s)
V1	USP5,535,364	V1 does not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, and being removably attachable to an optical module.
V2	USP5,545,845	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V3	USP5,546,281	
V4	USP5,547,385	

V5	USP5,548,641	V5 does not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, and being removably attachable to an optical module.
V6	USP5,548,677	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V7	USP5,554,031	V7 through V11 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, and being removably attachable to an optical module.
V8	USP5,554,037	
V9	USP5,567,167	
V10	USP5,577,064	
V11	USP5,580,269	
V12	USP5,588,850	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V13	USP5,598,319	V13 through V15 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, and being removably attachable to an optical module.
V14	USP5,599,595	
V15	USP5,600,470	
V16	USP5,613,860	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
W1	USP5,629,919	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
W2	USP5,631,998	
W3	USP5,653,596	
W4	USP5,659,459	W4 does not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, and being removably attachable to an optical module.
W5	USP5,675,428	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
W6	USP5,687,267	
W7	USP5,717,533	
W8	USP5,724,729	
W9	USP5,726,864	
W10	USP5,734,558	
W11	USP5,736,782	

W12	USP5,747,735	
W13	USP5,767,999	
W14	USP5,779,504	
W15	USP5,797,771	
W16	USP5,836,774	

Ref	Title	Distinction between reference(s) and claim(s)
X1	USP5,864,468	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
X2	USP5,879,173	
X3	DE.4239124 A1	X3 through X21 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, and being removably attachable to an optical module.
X4	EP 0 232792 A1	
X5	EP.0 228 278	
X6	EP.0 305112 A2	
X7	EP.0 314 651 A2	
X8	EP.0 413 489 A2	
X9	EP.0 437 161 A2	
X10	EP.0 456 298 B1	
X11	EP.0 530 791 A2	
X12	EP.0 535 473 A1	
X13	EP.0 588 014 A2	
X14	EP.0 600 645 A1	
X15	EP.0 613 032 A2	
X16	EP.0 652 696 A1	
X17	EP.0 656 696 A1	
X18	EP.0 662 259 B1	
X19	EP.442 608 A2	
X20	WO 94/12900	
X21	JP.1-237783	

Ref	Title	Distinction between reference(s) and claim(s)
Y1	JP.2-151084	Y1 through Y19 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, and being removably attachable to an optical module.
Y2	JP.2-181710	
Y3	JP.2-278212	
Y4	JP.2-87837	
Y5	JP.3-20458	
Y6	JP.3-94869	
Y7	JP.4-109593	
Y8	JP.4-122905	
Y9	JP.4-165312	
Y10	JP.4-211208	
Y11	JP.4-221207	

Y12	JP.4-229962	
Y13	JP.4-230978	
Y14	JP.4-234715	
Y15	JP.4-270305	
Y16	JP.4-50901	
Y17	JP.4-87809	
Y18	JP.5-052802	
Y19	JP.5-134147	

Ref	Title	Distinction between reference(s) and claim(s)
Z1	JP.5-152607	Z1 through Z19 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, and being removably attachable to an optical module.
Z2	JP.5-188250	
Z3	JP.5-211379	
Z4	JP.5-218581	
Z5	JP.5-290913	
Z6	JP.5-70955	
Z7	JP.61-158046	
Z8	JP.61-188385	
Z9	JP.63-009325	
Z10	JP.63-16496	
Z11	JP.63-65967	
Z12	JP.63-65978	
Z13	JP.63-82998	
Z14	U-3-20458	
Z15	U-3-94869	
Z16	U-4-87809	
Z17	U-5-052802	
Z18	U-5-70955	
Z19	U-61-158046	

Ref	Title	Distinction between reference(s) and claim(s)
AA1	U-61-188385	AA1 through AA5 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, and being removably attachable to an optical module.
AA2	U-63-16496	
AA3	U-63-65967	
AA4	U-63-65978	
AA5	U-63-82998	

Ref	Title	Distinction between reference(s) and claim(s)
BB1	AT&T Microelectronics, "1408-Type ODL Transceiver"Feb. 1994 preliminary data sheet.p.2-10	BB1 through BB11 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, and being removably
BB2	Ronald LSoderstrom et al., "An optical Data Link using a CD laser", SPIE Vol.1577 High Speed Fiber Networks and Channels,pp.163-173,1991	
BB3	BCP, Inc. "Gigabits Over Multimode Optical Fiber"no date	

BB4	Ronald L.Soderstrom et al., "CD laser optical Data Links for Workstation and Midrange Computers", IEEE p.505-509, 1993.	attachable to an optical module.
BB5	FDDI Low-Cost Fiber Physical Layer Medium Dependent (LCF-PMD) Common Receiver Footprint, no date.	
BB6	HP Module HFBR-5103, FDDI Data Sheet, <a href="http://www.hp.com/HP-COMP/fiber/hfbr5103.html">http://www.hp.com/HP-COMP/fiber/hfbr5103.html</a> , Jun. 11, 1998	
BB7	IBM Technical Disclosure Bulletin "Optical Link Card Guide/Retention System". <a href="http://www.patents.ibm.com/tdbs/tdb?&amp;order=93A+60964">www.patents.ibm.com/tdbs/tdb?&amp;order=93A+60964</a> , April 1993	
BB8	IBM, "A Proposal for a New High Performance... "OptoElectronics Enterprise Oct. 1992 ANSI Meeting, Oct. 13, 1992	
BB9	IBM, et al, "GLM Family", FCSI-301-Ren Sun, GLM, ,,,,,, FCSI-301-Rev1.0, Feb. 16, 1994.	
BB10	Methode Electronics, Inc., "DM 1063-DBLM9 Copper Gigabit Link Module" data sheet, (no date)	
BB11	"Raylan Joins Low-Wavelength Push -850 nm Transceiver", Electronic Engineering Times, Aug. 1993.	

Ref	Title	Distinction between reference(s) and claim(s)
CC1	Sumitomo Electric Fiber Optics Corp. "Transceiver Manufacturers to Support Common Footprint for Desktop FDDI Applications, " June 23, 1992.	CC1 does not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, and being removably attachable to an optical module.
CC2	Sun Microsystems computer Co. et al., Gigabit Interface Converter (GBIC), Rev 4.4, Dec. 1, 1997	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
CC3	Siemens, "Who provides Low-Cost Transceivers for all Standards?" no date.	CC3 through CC11 not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, and being removably attachable to an optical module.
CC4	AMP "PC Board Connectors", Product Guide 82759, pp. 7104-7108, Catalog E2750 issued Jun. 1991	
CC5	AMP Inc. "Lytel Molded-Optronic SC Duplex Transceiver" Catalog 65922, Dec. 1993.	
CC6	AMPHENOL Engineering News vol. 7 No. 6. , pp241, 264-65, Nov. 1994	
CC7	Baldwin and Kellerman, "Fiber Optic Module Interface Attachment" Research disclosure, Kenneth Mason Publications Ltd., England, Apr. 1991.	
CC8	Block and Gaio "Optical Link Card guide/Retention Sys" RESEARCH DISCLOSURE Kenneth Mason Publications Ltd., England, Apr. 1993.	
CC9	Cinch Hinge Connectors Catalog CM-16, Jul. 1963.	
CC10	Martin H. Weik, "Communication Standard Dictionary" p.454. definition of LED, Van Nostrand Reinhold Co.	
CC11	Edward R. Salmon, Encapsulation of Electronic Devices and Components, Marcel Dekker Inc., New York, 1987	

Ref	Title	Distinction between reference(s) and claim(s)
DD1	Dieter Gwinner, Conductive Coatings: Vacuum Evaporated Aluminum for Selective Shielding of Plastic Housings, no date.	DD1 through DD11 do not disclose, at least, a module cap comprising a first elastic part to protect



DD2	HEADS Up--Sumitomo Electric Lightwave joins Other in Announcement,May 11,1995	a laser diode module and a second elastic part to protect a photo diode module, and being removably attachable to an optical module.
DD3	Robert C. Herron,High Density Input/Output Connector Systems,3M Electronic Products Divisions,1990	
DD4	Shortwave Opto Assembly,IBM OptoElectronic Enterprises; IBM/OEE Market Survey Only, Rev.1,Jan.6,1993	
DD5	"Minimizing Electrostatic Discharge Damage to a Cartridge",IBM Technical Disclosure Bulletin, vol. 29 No. 10. Mar.,1987	
DD6	Japanese Standards Association " F04 Type Connectors for Optical Fiber Cords JIS C 5973"Japanese Standards Association,1990.	
DD7	Ronald L.Soderstrom et al.,A Miniaturized Fiber Optic Laser Receptacle Using a Compact Disk(CD)··· FOC/LAN '87&MFOC-WEST,pp.383-385,no date.	
DD8	"Transceiver Module Assembly", IBM Technical Disclosure Bulletin,Oct.1979, <a href="https://www.delphion.com/tbds/tdb?o=79A+06370">https://www.delphion.com/tbds/tdb?o=79A+06370</a> ,last visited Mar.3,2005.	
DD9	Ronald L.Soderstrom et al.,Optical Components and Electronic Packaging for High Performance Optical Data Links,THE RESEARCH INVESTMENT,p.19-28(no date).	
DD10	Thomas & Betts INFO-LAN Modem 1998	
DD11	"Active component manufacturers lower the cost of fiber to the desktop",Lightwave,Feb.1994 pp.58,67.	

Ref	Title	Distinction between reference(s) and claim(s)
EE1	Fibre Distributed Data Interface(FDDI)-Token Ring Low-Cost Fibre Physical Layer Medium Dependent (LCF-PMD),American National Standards Institute,1996.	EE1 through EE11 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, and being removably attachable to an optical module.
EE2	Communications Standard Dictionary; p.454,definition of inhomogeneous fiber,Van Nostrand Reinhold Publishing,1983	
EE3	"Transmitter/receiver assembly simplifies use of fibre optics", Design Engineering,p.19,Button Press,Ltd.,April 1980.	
EE4	Ronald L.Soderstrom et al., "CD laser as a fiber optic source for computer data links",Fiber Optic Datacom and Computer Networks,SPIE-The International Society for Optical Engineerings,Vol.1577,pp.174-181,1988	
EE5	David A.Knodel et al., "Open Fibre Control,a laser safety interlock technique",High-Speed Fiber Networks and Channels,SPIE-The International Society for Optical Engineering Proceedings,Vol.991,pp.179-182,1992	
EE6	"IBM Technical Disclosure Bulletin, Electrostatic Dissipative Enclosed Connector",Vol.34,No.7B,Dec.1991	
EE7	"High Reliability SW Laser For Optical Data Links", LEOS '93 Conference Proceedings, IEEE Lasers and Electro-Optics Society 1993 Annual Meeting;	
EE8	Minimizing Electrostatic Discharge to a Cartridge,IBM Technical Disclosure Bulletin,March 1987, <a href="https://www.delphion.com/tdb?o=87A%2060509">https://www.delphion.com/tdb?o=87A%2060509</a> ,last visited Mar.8,2005.	

EE9	K.P.Jackson et al., "High-Density, Array, Optical Interconnects for Multi-Chip Module Conference MCMC-92 Proceedings, IEEE Computer Society Press.	
EE10	TDB: Stackable Circuit Card Packaging within a Logic Cage, IBM Technical Disclosure Bulletin, Dec. 1992, <a href="https://www.delphion.com/tbds/tdb?o=92A%2063485">https://www.delphion.com/tbds/tdb?o=92A%2063485</a> , last visited Mar. 8, 2005	
EE11	Jeff Hechi, The Laser Guidebook, 2nd ed., McGraw Hill, Inc., 1992	

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Ref	Title	Distinction between reference(s) and claim(s)
A1	Re.32,502	A1 through A16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
A2	USP2,899,669	
A3	USP3,264,601	
A4	USP3,332,860	
A5	USP3,474,380	
A6	USP3,497,866	
A7	USP3,523,269	
A8	USP3,670,290	
A9	USP3,673,545	
A10	USP3,706,869	
A11	USP3,737,729	
A12	USP3,790,923	
A13	USP3,792,284	
A14	USP3,805,116	
A15	USP3,809,908	
A16	USP3,976,877	

Ref	Title	Distinction between reference(s) and claim(s)
B1	USP3,990,761	B1 through B16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
B2	USP4,047,242	
B3	USP4,156,903	
B4	USP4,161,650	
B5	USP4,167,303	
B6	USP4,176,897	
B7	USP4,217,019	
B8	USP4,217,488	
B9	USP4,226,491	
B10	USP4,234,968	
B11	USP4,249,266	
B12	USP4,252,402	
B13	USP4,257,124	
B14	USP4,268,756	
B15	USP4,273,413	
B16	USP4,276,656	

Ref	Title	Distinction between reference(s) and claim(s)
C1	USP4,294,682	C1 through C16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part
C2	USP4,295,181	
C3	USP4,301,543	
C4	USP4,330,870	

C5	USP4,345,808	and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
C6	USP4,347,655	
C7	USP4,357,606	
C8	USP4,360,248	
C9	USP4,366,565	
C10	USP4,369,494	
C11	USP4,380,360	
C12	USP4,388,671	
C13	USP4,393,516	
C14	USP4,398,073	
C15	USP4,398,780	
C16	USP4,399,563	

Ref	Title	Distinction between reference(s) and claim(s)
D1	USP4,408,273	D1 through D16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
D2	USP4,422,088	
D3	USP4,427,879	
D4	USP4,430,699	
D5	USP4,434,537	
D6	USP4,437,190	
D7	USP4,439,006	
D8	USP4,446,515	
D9	USP4,449,244	
D10	USP4,449,784	
D11	USP4,453,903	
D12	USP4,459,658	
D13	USP4,461,537	
D14	USP4,470,154	
D15	USP4,486,059	
D16	USP4,493,113	

Ref	Title	Distinction between reference(s) and claim(s)
E1	USP4,501,021	E1 through E16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
E2	USP4,502,130	
E3	USP4,505,035	
E4	USP4,506,937	
E5	USP4,510,553	
E6	USP4,511,207	
E7	USP4,514,586	
E8	USP4,516,204	
E9	USP4,519,670	
E10	USP4,519,672	
E11	USP4,519,673	

E12	USP4,522,463	
E13	USP4,526,438	
E14	USP4,526,986	
E15	USP4,527,286	
E16	USP4,529,266	

Ref	Title	Distinction between reference(s) and claim(s)
F1	USP4,530,566	F1 through F16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
F2	USP4,531,810	
F3	USP4,533,208	
F4	USP4,533,209	
F5	USP4,534,616	
F6	USP4,534,617	
F7	USP4,535,233	
F8	USP4,537,468	
F9	USP4,539,476	
F10	USP4,540,237	
F11	USP4,540,246	
F12	USP4,541,036	
F13	USP4,541,685	
F14	USP4,542,076	
F15	USP4,544,231	
F16	USP4,544,233	

Ref	Title	Distinction between reference(s) and claim(s)
G1	USP4,544,234	G1 through G16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
G2	USP4,545,074	
G3	USP4,545,077	
G4	USP4,545,642	
G5	USP4,545,643	
G6	USP4,545,644	
G7	USP4,545,645	
G8	USP4,548,465	
G9	USP4,548,466	
G10	USP4,548,467	
G11	USP4,549,782	
G12	USP4,549,783	
G13	USP4,550,975	
G14	USP4,553,811	
G15	USP4,553,813	
G16	USP4,553,814	

Ref	Title	Distinction between reference(s) and claim(s)
H1	USP4,556,279	H1 through H16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
H2	USP4,556,281	
H3	USP4,556,282	
H4	USP4,557,551	
H5	USP4,560,234	
H6	USP4,563,057	
H7	USP4,566,753	
H8	USP4,568,145	
H9	USP4,569,569	
H10	USP4,573,760	
H11	USP4,580,295	
H12	USP4,580,872	
H13	USP4,588,256	
H14	USP4,589,728	
H15	USP4,597,631	
H16	USP4,614,836	

Ref	Title	Distinction between reference(s) and claim(s)
I1	USP4,629,270	I1 through I16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
I2	USP4,634,239	
I3	USP4,641,371	
I4	USP4,647,148	
I5	USP4,652,976	
I6	USP4,663,240	
I7	USP4,663,603	
I8	USP4,678,264	
I9	USP4,679,883	
I10	USP4,695,106	
I11	USP4,697,864	
I12	USP4,708,433	
I13	USP4,715,675	
I14	USP4,720,630	
I15	USP4,722,584	
I16	USP4,736,100	

Ref	Title	Distinction between reference(s) and claim(s)
J1	USP4,756,593	J1 through J16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign
J2	USP4,762,388	
J3	USP4,767,179	
J4	USP4,772,931	
J5	USP4,779,952	
J6	USP4,789,218	

J7	USP4,798,430	matter when the module cap is removably attached to an optical module.
J8	USP4,798,440	
J9	USP4,807,006	
J10	USP4,807,955	
J11	USP4,808,115	
J12	USP4,811,165	
J13	USP4,812,133	
J14	USP4,821,145	
J15	USP4,823,235	
J16	USP4,838,630	

Ref	Title	Distinction between reference(s) and claim(s)
K1	USP4,840,451	K1 through K16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
K2	USP4,844,581	
K3	USP4,847,711	
K4	USP4,847,771	
K5	USP4,849,944	
K6	USP4,857,002	
K7	USP4,862,327	
K8	USP4,872,212	
K9	USP4,872,736	
K10	USP4,881,789	
K11	USP4,884,336	
K12	USP4,897,711	
K13	USP4,906,197	
K14	USP4,927,225	
K15	USP4,944,568	
K16	USP4,945,448	

Ref	Title	Distinction between reference(s) and claim(s)
L1	USP4,953,929	L1 through L16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
L2	USP4,955,817	
L3	USP4,963,104	
L4	USP4,967,312	
L5	USP4,977,329	
L6	USP4,979,793	
L7	USP4,979,794	
L8	USP4,986,625	
L9	USP4,989,934	
L10	USP4,990,104	
L11	USP4,991,062	
L12	USP5,002,495	
L13	USP5,004,434	

L14	USP5,006,286	
L15	USP5,011,425	
L16	USP5,029,254	

Ref	Title	Distinction between reference(s) and claim(s)
M1	USP5,035,482	M1 through M16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
M2	USP5,035,641	
M3	USP5,040,993	
M4	USP5,041,025	
M5	USP5,043,775	
M6	USP5,044,982	
M7	USP5,045,635	
M8	USP5,045,971	
M9	USP5,046,955	
M10	USP5,060,373	
M11	USP5,071,219	
M12	USP5,076,656	
M13	USP5,076,688	
M14	USP5,082,344	
M15	USP5,084,802	
M16	USP5,086,422	

Ref	Title	Distinction between reference(s) and claim(s)
N1	USP5,091,991	N1 through N19 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
N2	USP5,093,879	
N3	USP5,094,623	
N4	USP5,101,463	
N5	USP5,104,243	
N6	USP5,107,404	
N7	USP5,108,294	
N8	USP5,109,453	
N9	USP5,113,467	
N10	USP5,116,239	
N11	USP5,117,476	
N12	USP5,118,362	
N13	USP5,118,904	
N14	USP5,120,578	
N15	USP5,122,893	
N16	USP5,124,885	
N17	USP5,125,849	
N18	USP5,127,071	
N19	USP5,132,871	



Ref	Title	Distinction between reference(s) and claim(s)
O1	USP5,134,677	O1 through O17 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
O2	USP5,134,679	
O3	USP5,136,063	
O4	USP5,136,152	
O5	USP5,136,603	
O6	USP5,138,537	
O7	USP5,138,678	
O8	USP5,140,663	
O9	USP5,155,786	
O10	USP5,157,769	
O11	USP5,167,139	
O12	USP5,168,537	
O13	USP5,170,146	
O14	USP5,171,167	
O15	USP5,173,059	
O16	USP5,183,404	
O17	USP5,183,405	

Ref	Title	Distinction between reference(s) and claim(s)
P1	USP5,195,911	P1 through P17 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
P2	USP5,202,536	
P3	USP5,207,597	
P4	USP5,212,752	
P5	USP5,212,754	
P6	USP5,218,519	
P7	USP5,225,760	
P8	USP5,233,676	
P9	USP5,233,674	
P10	USP5,234,353	
P11	USP5,238,426	
P12	USP5,241,614	
P13	USP5,247,532	
P14	USP5,259,052	
P15	USP5,259,054	
P16	USP5,262,923	
P17	USP5,271,079	

Ref	Title	Distinction between reference(s) and claim(s)
Q1	USP5,274,729	Q1 through Q16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a
Q2	USP5,285,466	
Q3	USP5,285,511	

Q4	USP5,285,512	photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
Q5	USP5,286,207	
Q6	USP5,286,247	
Q7	USP5,288,247	
Q8	USP5,289,347	
Q9	USP5,296,813	
Q10	USP5,299,089	
Q11	USP5,304,069	
Q12	USP5,305,182	
Q13	USP5,311,408	
Q14	USP5,315,679	
Q15	USP5,317,663	
Q16	USP5,321,819	

Ref	Title	Distinction between reference(s) and claim(s)
R1	USP5,329,604	R1 through R16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
R2	USP5,333,221	
R3	USP5,333,225	
R4	USP5,337,391	
R5	USP5,337,396	
R6	USP5,340,340	
R7	USP5,345,524	
R8	USP5,345,530	
R9	USP5,353,364	
R10	USP5,353,634	
R11	USP5,356,300	
R12	USP5,357,402	
R13	USP5,361,244	
R14	USP5,361,318	
R15	USP5,366,664	
R16	USP5,372,515	

Ref	Title	Distinction between reference(s) and claim(s)
S1	USP5,375,040	S1 through S16 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
S2	USP5,383,793	
S3	USP5,388,995	
S4	USP5,390,268	
S5	USP5,393,249	
S6	USP5,397,242	
S7	USP5,398,154	
S8	USP5,398,295	
S9	USP5,408,384	
S10	USP5,414,787	

S11	USP5,416,668	
S12	USP5,416,870	
S13	USP5,416,872	
S14	USP5,419,717	
S15	USP5,424,573	
S16	USP5,428,703	

Ref	Title	Distinction between reference(s) and claim(s)
T1	USP5,428,704	T1 through T4 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
T2	USP5,434,747	
T3	USP5,443,390	
T4	USP5,446,814	
T5	USP5,452,387	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T6	USP5,454,080	T6 through T9 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
T7	USP5,455,703	
T8	USP5,463,532	
T9	USP5,469,332	
T10	USP5,470,257	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T11	USP5,470,259	
T12	USP5,475,734	T12 does not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
T13	USP5,477,418	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T14	USP5,478,253	
T15	USP5,478,259	T15 and T16 do not disclose, at least, a module cap

T16	USP5,478,260	comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
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Ref	Title	Distinction between reference(s) and claim(s)
U1	USP5,481,634	U1 through U4 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
U2	USP5,482,658	
U3	USP5,487,678	
U4	USP5,491,613	
U5	USP5,491,712	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U6	USP5,494,747	U6 does not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
U7	USP5,499,311	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U8	USP5,499,312	U8 does not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
U9	USP5,504,657	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

U10	USP5,506,921	U10 through U14 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
U11	USP5,506,922	
U12	USP5,507,668	
U13	USP5,526,235	
U14	USP5,527,991	
U15	USP5,534,662	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U16	USP5,535,296	

Ref	Title	Distinction between reference(s) and claim(s)
V1	USP5,535,364	V1 does not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
V2	USP5,545,845	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V3	USP5,546,281	
V4	USP5,547,385	
V5	USP5,548,641	V5 does not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
V6	USP5,548,677	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V7	USP5,554,031	V7 through V11 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part
V8	USP5,554,037	
V9	USP5,567,167	
V10	USP5,577,064	

V11	USP5,580,269	and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
V12	USP5,588,850	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V13	USP5,598,319	V13 through V15 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
V14	USP5,599,595	
V15	USP5,600,470	
V16	USP5,613,860	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
W1	USP5,629,919	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
W2	USP5,631,998	
W3	USP5,653,596	
W4	USP5,659,459	W4 does not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
W5	USP5,675,428	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
W6	USP5,687,267	
W7	USP5,717,533	
W8	USP5,724,729	
W9	USP5,726,864	
W10	USP5,734,558	
W11	USP5,736,782	
W12	USP5,747,735	
W13	USP5,767,999	
W14	USP5,779,504	
W15	USP5,797,771	

W16	USP5,836,774	
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Ref	Title	Distinction between reference(s) and claim(s)
X1	USP5,864,468	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
X2	USP5,879,173	
X3	DE.4239124 A1	X3 through X21 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
X4	EP 0 232792 A1	
X5	EP.0 228 278	
X6	EP.0 305112 A2	
X7	EP.0 314 651 A2	
X8	EP.0 413 489 A2	
X9	EP.0 437 161 A2	
X10	EP.0 456 298 B1	
X11	EP.0 530 791 A2	
X12	EP.0 535 473 A1	
X13	EP.0 588 014 A2	
X14	EP.0 600 645 A1	
X15	EP.0 613 032 A2	
X16	EP.0 652 696 A1	
X17	EP.0 656 696 A1	
X18	EP.0 662 259 B1	
X19	EP.442 608 A2	
X20	WO 94/12900	
X21	JP.1-237783	

Ref	Title	Distinction between reference(s) and claim(s)
Y1	JP.2-151084	Y1 through Y19 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
Y2	JP.2-181710	
Y3	JP.2-278212	
Y4	JP.2-87837	
Y5	JP.3-20458	
Y6	JP.3-94869	
Y7	JP.4-109593	
Y8	JP.4-122905	
Y9	JP.4-165312	
Y10	JP.4-211208	
Y11	JP.4-221207	
Y12	JP.4-229962	
Y13	JP.4-230978	
Y14	JP.4-234715	
Y15	JP.4-270305	

Y16	JP.4-50901	
Y17	JP.4-87809	
Y18	JP.5-052802	
Y19	JP.5-134147	

Ref	Title	Distinction between reference(s) and claim(s)
Z1	JP.5-152607	Z1 through Z19 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
Z2	JP.5-188250	
Z3	JP.5-211379	
Z4	JP.5-218581	
Z5	JP.5-290913	
Z6	JP.5-70955	
Z7	JP.61-158046	
Z8	JP.61-188385	
Z9	JP.63-009325	
Z10	JP.63-16496	
Z11	JP.63-65967	
Z12	JP.63-65978	
Z13	JP.63-82998	
Z14	U-3-20458	
Z15	U-3-94869	
Z16	U-4-87809	
Z17	U-5-052802	
Z18	U-5-70955	
Z19	U-61-158046	

Ref	Title	Distinction between reference(s) and claim(s)
AA1	U-61-188385	AA1 through AA5 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
AA2	U-63-16496	
AA3	U-63-65967	
AA4	U-63-65978	
AA5	U-63-82998	

Ref	Title	Distinction between reference(s) and claim(s)
BB1	AT&T Microelectronics, "1408-Type ODL Transceiver"Feb. 1994 preliminary data sheet.p.2-10	BB1 through BB11 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module
BB2	Ronald LSoderstrom et al., "An optical Data Link using a CD laser", SPIE Vol.1577 High Speed Fiber Networks and Channels,pp.163-173,1991	
BB3	BCP, Inc. "Gigabits Over Multimode Optical Fiber"no date	
BB4	Ronald L.Soderstrom et al., "CD laser optical Data Links for Workstation and Midrange Computers", IEEE p.505-509,1993.	



BB5	FDDI Low-Cost Fiber Physiscal Layer Medium Dependent (LCF-PMD) Common Receiver Footprint,no date.	from foreign matter when the module cap is removably attached to an optical module.
BB6	HP Module HFBR-5103, FDDI Data Sheet,http://www.hp.com/HP-COMP/fiber/hfbr5103.html,Jun. 11,1998	
BB7	IBM Technical Disclosure Bulletin "Optical Link Card Guide/Retention System",www.patents.ibm.com/tdbs/tdb?&order=93A+60964, April 1993	
BB8	IBM, "A Proposal for a New High Performance... "OptopElectronics Enterprise Oct.1992 ANSI Meeting,Oct.13,1992	
BB9	IBM, et al,"GLM Family",FCSI-301-Ren Sun, GLM, ,,,,,, FCSI-301-Rev1.0, Feb. 16, 1994.	
BB10	Methode Electronics, Inc., "DM 1063-DBLM9 Copper Gigabit Link Module" data sheet.(no date)	
BB11	"Raylan Joins Low-Wavelength Push -850 nm Transceiver",Electronic Engineering Times,Aug.1993.	

Ref	Title	Distinction between reference(s) and claim(s)
CC1	Sumitomo Electric Fiber Optics Corp. "Transceiver Manufacturers to Support Common Footprint for Desktop FDDI Applications, " June 23, 1992.	CC1 does not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
CC2	Sun Microsystems computer Co. et al., Gigabit Interface Converter (GBIC), Rev 4.4, Dec. 1, 1997	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
CC3	Siemens, "Who provides Low-Cost Transceivers for all Standards?" no date.	CC3 through CC11 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
CC4	AMP "PC Board Connectors", Product Guide 82759, pp. 7104-7108, Catalog E2750 issued Jun. 1991	
CC5	AMP Inc. "Lytel Molded-Optronic SC Duplex Transceiver" Catalog 65922,Dec.1993.	
CC6	AMPHENOL Engineering News vol. 7 No. 6. , pp241, 264-65, Nov. 1994	
CC7	Baldwin and Kellerman, "Fiber Optic Module Interface Attachment" Research disclosure,Kenneth Mason Publications Ltd.,England,Apr.1991.	
CC8	Block and Gaio "Optical Link Card guide/Retention Sys" RESEARCH DISCLOSURE Kenneth Mason Publications Ltd.,England,Apr.1993.	
CC9	Cinch Hinge Connectors Catalog CM-16, Jul. 1963.	
CC10	Martin H. Weik,"Communication Standard Dictionary"p.454.definition of LED,Van Nostrand Reinhold Co.	
CC11	Edward R.Salmon,Encapsulation of Electronic Devices and Components,Marcel Deckker Inc.,New York,1987	

Ref	Title	Distinction between reference(s) and claim(s)
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DD1	Dieter Gwinner,Conductive Coatings:Vacuum Evaporated Aluminum for Selective Shielding of Plastic Housings,no date.	DD1 through DD11 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
DD2	HEADS Up--Sumitomo Electric Lightwave joins Other in Announcement,May 11,1995	
DD3	Robert C. Herron,High Density Input/Output Connector Systems,3M Electronic Products Divisions,1990	
DD4	Shortwave Opto Assembly,IBM OptoElectronic Enterprises; IBM/OEE Market Survey Only, Rev.1,Jan.6,1993	
DD5	"Minimizing Electrostatic Discharge Damage to a Cartridge",IBM Technical Disclosure Bulletin, vol. 29 No. 10. Mar.,1987	
DD6	Japanese Standards Association " F04 Type Connectors for Optical Fiber Cords JIS C 5973"Japanese Standards Association,1990.	
DD7	Ronald L.Soderstrom et al.,A Miniaturized Fiber Optic Laser Receptacle Using a Compact Disk(CD)··· FOC/LAN'87&MFOC-WEST,pp.383-385,no date.	
DD8	"Transceiver Module Assembly", IBM Technical Disclosure Bulletin,Oct.1979,https://www.delphion.com/tbdb?o=79A+06370,last visited Mar.3,2005.	
DD9	Ronald L.Soderstrom et al.,Optical Components and Electronic Packaging for High Performance Optical Data Links,THE RESEARCH INVESTMENT,p.19-28(no date).	
DD10	Thomas & Betts INFO-LAN Modem 1998	
DD11	"Active component manufacturers lower the cost of fiber to the desktop",Lightwave,Feb.1994 pp.58,67.	

Ref	Title	Distinction between reference(s) and claim(s)
EE1	Fibre Distributed Data Interface(FDDI)-Token Ring Low-Cost Fibre Physical Layer Medium Dependent (LCF-PMD),American National Standards Institute,1996.	EE1 through EE11 do not disclose, at least, a module cap comprising a first elastic part to protect a laser diode module and a second elastic part to protect a photo diode module, such that the first elastic part and the second elastic part protect the laser diode module and the photo diode module from foreign matter when the module cap is removably attached to an optical module.
EE2	Communications Standard Dictionary; p.454,definition of inhomogeneous fiber,Van Nostrand Reinhold Publishing,1983	
EE3	"Transmitter/receiver assembly simplifies use of fibre optics", Design Engineering,p.19,Button Press,Ltd.,April 1980.	
EE4	Ronald L.Soderstrom et al., "CD laser as a fiber optic source for computer data links",Fiber Optic Datacom and Computer Networks,SPIE-The International Society for Optical Engineering,Vol.1577,pp.174-181,1988	
EE5	David A.Knodel et al., "Open Fibre Control,a laser safety interlock technique",High-Speed Fiber Networks and Channels,SPIE-The International Society for Optical Engineering Proceedings,Vol.991,pp.179-182,1992	
EE6	"IBM Technical Disclosure Bulletin, Electrostatic Dissipative Enclosed Connector", Vol.34,No.7B,Dec.1991	
EE7	"High Reliability SW Laser For Optical Data Links", LEOS '93 Conference Proceedings, IEEE Lasers and Electro-Optics Society 1993 Annual Meeting;	
EE8	Minimizing Electrostatic Discharge to a Cartridge,IBM Technical Disclosure Bulletin,March 1987,https://www.delphion.com/tbdb?o=87A%2060509 ,last visited Mar.8,2005.	

EE9	K.P.Jackson et al., "High-Density, Array, Optical Interconnects for Multi-Chip Module Conference MCMC-92 Proceedings, IEEE Computer Society Press.	
EE10	TDB: Stackable Circuit Card Packaging within a Logic Cage, IBM Technical Disclosure Bulletin, Dec. 1992, <a href="https://www.delphion.com/tbds/tdb?o=92A%2063485">https://www.delphion.com/tbds/tdb?o=92A%2063485</a> , last visited Mar. 8, 2005	
EE11	Jeff Hechi, The Laser Guidebook, 2nd ed., McGraw Hill, Inc., 1992	

Claim Chart for Claims 163-165 of 10/766,488

Ref	Title	Distinction between reference(s) and claim(s)
A1	Re.32,502	A1 through A12 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
A2	USP2,899,669	
A3	USP3,264,601	
A4	USP3,332,860	
A5	USP3,474,380	
A6	USP3,497,866	
A7	USP3,523,269	
A8	USP3,670,290	
A9	USP3,673,545	
A10	USP3,706,869	
A11	USP3,737,729	
A12	USP3,790,923	
A13	USP3,792,284	A13 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
A14	USP3,805,116	A14 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
A15	USP3,809,908	A15 and A16 do not disclose, at least, an optical module comprising a serial connector to transfer serial data.
A16	USP3,976,877	

Ref	Title	Distinction between reference(s) and claim(s)
B1	USP3,990,761	B1 through B3 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
B2	USP4,047,242	
B3	USP4,156,903	
B4	USP4,161,650	B4 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
B5	USP4,167,303	B5 through B7 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
B6	USP4,176,897	
B7	USP4,217,019	

B8	USP4,217,488	B8 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
B9	USP4,226,491	B9 and B10 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
B10	USP4,234,968	
B11	USP4,249,266	B11 through B13 do not disclose, at least, an optical module comprising a serial connector to transfer serial data.
B12	USP4,252,402	
B13	USP4,257,124	
B14	USP4,268,756	B14 and B15 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
B15	USP4,273,413	
B16	USP4,276,656	B16 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.

Ref	Title	Distinction between reference(s) and claim(s)
C1	USP4,294,682	C1 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
C2	USP4,295,181	C2 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
C3	USP4,301,543	C3 and C4 do not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected proximate to a first edge of the circuit board.
C4	USP4,330,870	
C5	USP4,345,808	C5 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode

		transmits the laser diode optical signal.
C6	USP4,347,655	C6 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected proximate to a first edge of the circuit board.
C7	USP4,357,606	D7 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
C8	USP4,360,248	C8 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
C9	USP4,366,565	C9 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected proximate to a first edge of the circuit board.
C10	USP4,369,494	C10 through C15 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
C11	USP4,380,360	
C12	USP4,388,671	
C13	USP4,393,516	
C14	USP4,398,073	
C15	USP4,398,780	
C16	USP4,399,563	C16 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected proximate to a first edge of the circuit board.

Ref	Title	Distinction between reference(s) and claim(s)
D1	USP4,408,273	D1 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according

		to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
D2	USP4,422,088	D2 through D4 do not disclose, at least, an optical module comprising a serial connector to transfer serial data.
D3	USP4,427,879	
D4	USP4,430,699	
D5	USP4,434,537	D5 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
D6	USP4,437,190	D6 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
D7	USP4,439,006	D7 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected proximate to a first edge of the circuit board.
D8	USP4,446,515	D8 and D9 do not disclose, at least, an optical module comprising a serial connector to transfer serial data.
D9	USP4,449,244	
D10	USP4,449,784	D10 through D13 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
D11	USP4,453,903	
D12	USP4,459,658	
D13	USP4,461,537	
D14	USP4,470,154	D14 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
D15	USP4,486,059	D15 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
D16	USP4,493,113	D16 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.

Ref	Title	Distinction between reference(s) and claim(s)
E1	USP4,501,021	E1 does not disclose, at least, an optical module comprising a laser diode and a photo diode module which are electrically connected to a circuit board proximate to a first edge of the circuit board, and a serial connector to transfer serial data which is positioned proximate to and parallel with a second edge of the circuit board.
E2	USP4,502,130	E2 through E5 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
E3	USP4,505,035	
E4	USP4,506,937	
E5	USP4,510,553	
E6	USP4,511,207	E6 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected proximate to a first edge of the circuit board.
E7	USP4,514,586	E7 through E14 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
E8	USP4,516,204	
E9	USP4,519,670	
E10	USP4,519,672	
E11	USP4,519,673	
E12	USP4,522,463	
E13	USP4,526,438	
E14	USP4,526,986	
E15	USP4,527,286	E15 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
E16	USP4,529,266	E16 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
F1	USP4,530,566	F1 through F3 do not disclose, at least, an optical module comprising a laser diode driver to covert
F2	USP4,531,810	



F3	USP4,533,208	serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
F4	USP4,533,209	F4 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
F5	USP4,534,616	F5 through F8 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
F6	USP4,534,617	
F7	USP4,535,233	
F8	USP4,537,468	
F9	USP4,539,476	F9 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
F10	USP4,540,237	F10 through F16 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
F11	USP4,540,246	
F12	USP4,541,036	
F13	USP4,541,685	
F14	USP4,542,076	
F15	USP4,544,231	
F16	USP4,544,233	

Ref	Title	Distinction between reference(s) and claim(s)
G1	USP4,544,234	G1 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
G2	USP4,545,074	G2 and G3 do not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected proximate to a first edge of the circuit board.
G3	USP4,545,077	
G4	USP4,545,642	G4 through G8 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser
G5	USP4,545,643	
G6	USP4,545,644	
G7	USP4,545,645	

G8	USP4,548,465	diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
G9	USP4,548,466	G9 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
G10	USP4,548,467	G10 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
G11	USP4,549,782	G11 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
G12	USP4,549,783	G12 through G14 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
G13	USP4,550,975	
G14	USP4,553,811	
G15	USP4,553,813	G15 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
G16	USP4,553,814	G16 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
H1	USP4,556,279	H1 through H10 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
H2	USP4,556,281	
H3	USP4,556,282	
H4	USP4,557,551	
H5	USP4,560,234	
H6	USP4,563,057	
H7	USP4,566,753	
H8	USP4,568,145	
H9	USP4,569,569	
H10	USP4,573,760	
H11	USP4,580,295	H11 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.

H12	USP4,580,872	H12 through H16 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
H13	USP4,588,256	
H14	USP4,589,728	
H15	USP4,597,631	
H16	USP4,614,836	

Ref	Title	Distinction between reference(s) and claim(s)
I1	USP4,629,270	I1 and I2 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
I2	USP4,634,239	
I3	USP4,641,371	I3 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected proximate to a first edge of the circuit board.
I4	USP4,647,148	I4 through I16 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
I5	USP4,652,976	
I6	USP4,663,240	
I7	USP4,663,603	
I8	USP4,678,264	
I9	USP4,679,883	
I10	USP4,695,106	
I11	USP4,697,864	
I12	USP4,708,433	
I13	USP4,715,675	
I14	USP4,720,630	
I15	USP4,722,584	
I16	USP4,736,100	

Ref	Title	Distinction between reference(s) and claim(s)
J1	USP4,756,593	J1 through J15 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal,
J2	USP4,762,388	
J3	USP4,767,179	
J4	USP4,772,931	
J5	USP4,779,952	

J6	USP4,789,218	producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
J7	USP4,798,430	
J8	USP4,798,440	
J9	USP4,807,006	
J10	USP4,807,955	
J11	USP4,808,115	
J12	USP4,811,165	
J13	USP4,812,133	
J14	USP4,821,145	
J15	USP4,823,235	
J16	USP4,838,630	J16 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.

Ref	Title	Distinction between reference(s) and claim(s)
K1	USP4,840,451	K1 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
K2	USP4,844,581	K2 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected proximate to a first edge of the circuit board.
K3	USP4,847,711	K3 through K9 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
K4	USP4,847,771	
K5	USP4,849,944	
K6	USP4,857,002	
K7	USP4,862,327	
K8	USP4,872,212	
K9	USP4,872,736	
K10	USP4,881,789	K10 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
K11	USP4,884,336	K11 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
K12	USP4,897,711	K12 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
K13	USP4,906,197	K13 through K16 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector
K14	USP4,927,225	
K15	USP4,944,568	

K16	USP4,945,448	transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
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Ref	Title	Distinction between reference(s) and claim(s)
L1	USP4,953,929	L1 through L4 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
L2	USP4,955,817	
L3	USP4,963,104	
L4	USP4,967,312	
L5	USP4,977,329	L5 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
L6	USP4,979,793	L6 and L7 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
L7	USP4,979,794	
L8	USP4,986,625	L8 and L9 do not disclose, at least, an optical module comprising a serial connector to transfer serial data.
L9	USP4,989,934	
L10	USP4,990,104	L10 through L16 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
L11	USP4,991,062	
L12	USP5,002,495	
L13	USP5,004,434	
L14	USP5,006,286	
L15	USP5,011,425	
L16	USP5,029,254	

Ref	Title	Distinction between reference(s) and claim(s)
M1	USP5,035,482	M1 through M4 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
M2	USP5,035,641	
M3	USP5,040,993	
M4	USP5,041,025	
M5	USP5,043,775	M5 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.

M6	USP5,044,982	M6 through M14 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
M7	USP5,045,635	
M8	USP5,045,971	
M9	USP5,046,955	
M10	USP5,060,373	
M11	USP5,071,219	
M12	USP5,076,656	
M13	USP5,076,688	
M14	USP5,082,344	
M15	USP5,084,802	M15 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
M16	USP5,086,422	M16 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
N1	USP5,091,991	N1 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
N2	USP5,093,879	N2 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
N3	USP5,094,623	N3 through N8 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
N4	USP5,101,463	
N5	USP5,104,243	
N6	USP5,107,404	
N7	USP5,108,294	
N8	USP5,109,453	
N9	USP5,113,467	N9 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
N10	USP5,116,239	N10 through N14 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to
N11	USP5,117,476	
N12	USP5,118,362	
N13	USP5,118,904	

N14	USP5,120,578	drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
N15	USP5,122,893	N15 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
N16	USP5,124,885	N16 and N17 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
N17	USP5,125,849	
N18	USP5,127,071	N18 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
N19	USP5,132,871	N19 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
O1	USP5,134,677	O1 through O3 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
O2	USP5,134,679	
O3	USP5,136,063	
O4	USP5,136,152	O4 and O5 do not disclose, at least, an optical module comprising a serial connector to transfer serial data.
O5	USP5,136,603	
O6	USP5,138,537	O6 through O8 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
O7	USP5,138,678	
O8	USP5,140,663	
O9	USP5,155,786	O9 and O10 do not disclose, at least, an optical module comprising a serial connector to transfer serial data.
O10	USP5,157,769	
O11	USP5,167,139	O11 does not disclose, at least, an optical module comprising a laser diode driver to covert serial

		data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
O12	USP5,168,537	O12 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
O13	USP5,170,146	O13 through O17 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
O14	USP5,171,167	
O15	USP5,173,059	
O16	USP5,183,404	
O17	USP5,183,405	

Ref	Title	Distinction between reference(s) and claim(s)
P1	USP5,195,911	P1 through P4 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
P2	USP5,202,536	
P3	USP5,207,597	
P4	USP5,212,752	
P5	USP5,212,754	P5 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
P6	USP5,218,519	P6 through P11 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
P7	USP5,225,760	
P8	USP5,233,676	
P9	USP5,233,674	
P10	USP5,234,353	
P11	USP5,238,426	
P12	USP5,241,614	P12 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
P13	USP5,247,532	P13 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected proximate to a first edge of the circuit board.
P14	USP5,259,052	P14 through P16 do not disclose, at least, an optical module comprising a laser diode driver to covert
P15	USP5,259,054	



P16	USP5,262,923	serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
P17	USP5,271,079	P17 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.

Ref	Title	Distinction between reference(s) and claim(s)
Q1	USP5,274,729	Q1 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
Q2	USP5,285,466	Q2 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
Q3	USP5,285,511	Q3 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
Q4	USP5,285,512	Q4 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
Q5	USP5,286,207	Q5 through Q16 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
Q6	USP5,286,247	
Q7	USP5,288,247	
Q8	USP5,289,347	
Q9	USP5,296,813	
Q10	USP5,299,089	
Q11	USP5,304,069	
Q12	USP5,305,182	
Q13	USP5,311,408	
Q14	USP5,315,679	
Q15	USP5,317,663	
Q16	USP5,321,819	

Ref	Title	Distinction between reference(s) and claim(s)
R1	USP5,329,604	R1 through R3 do not disclose, at least, an optical module comprising a laser diode driver to covert
R2	USP5,333,221	

R3	USP5,333,225	serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
R4	USP5,337,391	R4 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
R5	USP5,337,396	R5 and R6 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
R6	USP5,340,340	
R7	USP5,345,524	R7 and R8 do not disclose, at least, an optical module comprising a serial connector to transfer serial data.
R8	USP5,345,530	
R9	USP5,353,364	R9 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected proximate to a first edge of the circuit board.
R10	USP5,353,634	R10 through R12 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
R11	USP5,356,300	
R12	USP5,357,402	
R13	USP5,361,244	R13 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
R14	USP5,361,318	R14 through R16 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
R15	USP5,366,664	
R16	USP5,372,515	

Ref	Title	Distinction between reference(s) and claim(s)
S1	USP5,375,040	S1 through S9 do not disclose, at least, an optical

S2	USP5,383,793	module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
S3	USP5,388,995	
S4	USP5,390,268	
S5	USP5,393,249	
S6	USP5,397,242	
S7	USP5,398,154	
S8	USP5,398,295	
S9	USP5,408,384	S10 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
S10	USP5,414,787	
S11	USP5,416,668	
S12	USP5,416,870	
S13	USP5,416,872	
S14	USP5,419,717	
S15	USP5,424,573	
S16	USP5,428,703	S13 through S16 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
T1	USP5,428,704	T1 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
T2	USP5,434,747	T2 and T3 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
T3	USP5,443,390	
T4	USP5,446,814	T4 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
T5	USP5,452,387	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T6	USP5,454,080	T6 does not disclose, at least, an optical module comprising a laser diode driver to covert serial

		data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
T7	USP5,455,703	T7 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
T8	USP5,463,532	T8 and T9 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
T9	USP5,469,332	
T10	USP5,470,257	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T11	USP5,470,259	
T12	USP5,475,734	T12 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
T13	USP5,477,418	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T14	USP5,478,253	
T15	USP5,478,259	T15 and T16 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
T16	USP5,478,260	

Ref	Title	Distinction between reference(s) and claim(s)
U1	USP5,481,634	U1 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.

U2	USP5,482,658	U2 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
U3	USP5,487,678	U3 and U4 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
U4	USP5,491,613	
U5	USP5,491,712	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U6	USP5,494,747	U6 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
U7	USP5,499,311	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U8	USP5,499,312	U8 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
U9	USP5,504,657	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U10	USP5,506,921	U10 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
U11	USP5,506,922	U11 through U14 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
U12	USP5,507,668	
U13	USP5,526,235	
U14	USP5,527,991	
U15	USP5,534,662	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U16	USP5,535,296	

Ref	Title	Distinction between reference(s) and claim(s)
V1	USP5,535,364	V1 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
V2	USP5,545,845	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V3	USP5,546,281	
V4	USP5,547,385	
V5	USP5,548,641	V5 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
V6	USP5,548,677	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V7	USP5,554,031	V7 through V9 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
V8	USP5,554,037	
V9	USP5,567,167	
V10	USP5,577,064	V10 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
V11	USP5,580,269	V11 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
V12	USP5,588,850	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V13	USP5,598,319	V13 and V14 do not disclose, at least, an optical

V14	USP5,599,595	module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
V15	USP5,600,470	V15 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
V16	USP5,613,860	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
W1	USP5,629,919	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
W2	USP5,631,998	
W3	USP5,653,596	
W4	USP5,659,459	W4 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
W5	USP5,675,428	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
W6	USP5,687,267	
W7	USP5,717,533	
W8	USP5,724,729	
W9	USP5,726,864	
W10	USP5,734,558	
W11	USP5,736,782	
W12	USP5,747,735	
W13	USP5,767,999	
W14	USP5,779,504	
W15	USP5,797,771	
W16	USP5,836,774	

Ref	Title	Distinction between reference(s) and claim(s)
X1	USP5,864,468	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
X2	USP5,879,173	
X3	DE.4239124 A1	X3 through X6 do not disclose, at least, an optical

X4	EP 0 232792 A1	module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
X5	EP.0 228 278	
X6	EP.0 305112 A2	
X7	EP.0 314 651 A2	X7 and X8 do not disclose, at least, an optical module comprising a serial connector to transfer serial data.
X8	EP.0 413 489 A2	
X9	EP.0 437 161 A2	X9 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
X10	EP.0 456 298 B1	X10 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
X11	EP.0 530 791 A2	X11 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
X12	EP.0 535 473 A1	X12 through X14 do not disclose, at least, an optical module comprising a serial connector to transfer serial data.
X13	EP.0 588 014 A2	
X14	EP.0 600 645 A1	
X15	EP.0 613 032 A2	X15 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected proximate to a first edge of the circuit board.
X16	EP.0 652 696 A1	X16 through X18 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
X17	EP.0 656 696 A1	
X18	EP.0 662 259 B1	
X19	EP.442 608 A2	X19 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
X20	WO 94/12900	X20 and X21 do not disclose, at least, an optical



X21	JP.1-237783	module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
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Ref	Title	Distinction between reference(s) and claim(s)
Y1	JP.2-151084	Y1 through Y4 do not disclose, at least, an optical module comprising a serial connector to transfer serial data.
Y2	JP.2-181710	
Y3	JP.2-278212	
Y4	JP.2-87837	
Y5	JP.3-20458	Y5 through Y7 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
Y6	JP.3-94869	
Y7	JP.4-109593	
Y8	JP.4-122905	Y8 through Y10 do not disclose, at least, an optical module comprising a serial connector to transfer serial data.
Y9	JP.4-165312	
Y10	JP.4-211208	
Y11	JP.4-221207	Y11 through Y13 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
Y12	JP.4-229962	
Y13	JP.4-230978	
Y14	JP.4-234715	Y14 do not disclose, at least, an optical module comprising a serial connector to transfer serial data.
Y15	JP.4-270305	Y15 through Y18 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
Y16	JP.4-50901	
Y17	JP.4-87809	
Y18	JP.5-052802	
Y19	JP.5-134147	Y19 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.

Ref	Title	Distinction between reference(s) and claim(s)
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Z1	JP.5-152607	Z1 and Z2 do not disclose, at least, an optical module comprising a serial connector to transfer serial data.
Z2	JP.5-188250	
Z3	JP.5-211379	Z3 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
Z4	JP.5-218581	Z4 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
Z5	JP.5-290913	Z5 through Z8 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
Z6	JP.5-70955	
Z7	JP.61-158046	
Z8	JP.61-188385	
Z9	JP.63-009325	Z9 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected proximate to a first edge of the circuit board.
Z10	JP.63-16496	Z10 through Z19 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
Z11	JP.63-65967	
Z12	JP.63-65978	
Z13	JP.63-82998	
Z14	U-3-20458	
Z15	U-3-94869	
Z16	U-4-87809	
Z17	U-5-052802	
Z18	U-5-70955	
Z19	U-61-158046	

Ref	Title	Distinction between reference(s) and claim(s)
AA1	U-61-188385	AA1 through AA5 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to
AA2	U-63-16496	
AA3	U-63-65967	
AA4	U-63-65978	

AA5	U-63-82998	drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
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Ref	Title	Distinction between reference(s) and claim(s)
BB1	AT&T Microelectronics, "1408-Type ODL Transceiver" Feb. 1994 preliminary data sheet.p.2-10	BB1 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
BB2	Ronald LSoderstrom et al., "An optical Data Link using a CD laser", SPIE Vol.1577 High Speed Fiber Networks and Channels, pp.163-173,1991	BB2 through BB4 do not disclose, at least, an optical module comprising a serial connector to transfer serial data.
BB3	BCP, Inc. "Gigabits Over Multimode Optical Fiber" no date	
BB4	Ronald L.Soderstrom et al., "CD laser optical Data Links for Workstation and Midrange Computers", IEEE p.505-509,1993.	
BB5	FDDI Low-Cost Fiber Physical Layer Medium Dependent (LCF-PMD) Common Receiver Footprint, no date.	BB5 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected proximate to a first edge of the circuit board.
BB6	HP Module HFBR-5103, FDDI Data Sheet, <a href="http://www.hp.com/HP-COMP/fiber/hfbr5103.html">http://www.hp.com/HP-COMP/fiber/hfbr5103.html</a> , Jun.11,1998	BB6 and BB7 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
BB7	IBM Technical Disclosure Bulletin "Optical Link Card Guide/Retention System". <a href="http://www.patents.ibm.com/tlbs/tdb?&amp;order=93A">www.patents.ibm.com/tlbs/tdb?&amp;order=93A</a> +60964, April 1993	
BB8	IBM, "A Proposal for a New High Performance... "Optoelectronics Enterprise Oct.1992 ANSI Meeting, Oct.13,1992	BB8 and BB9 do not disclose, at least, an optical module comprising a serial connector to transfer serial data.
BB9	IBM, et al., "GLM Family", FCSI-301-Ren Sun, GLM, ,,,,,, FCSI-301-Rev1.0, Feb. 16, 1994.	
BB10	Methode Electronics, Inc., "DM 1063-DBLM9 Copper Gigabit Link Module" data sheet.(no date)	BB10 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
BB11	"Raylan Joins Low-Wavelength Push -850 nm Transceiver", Electronic Engineering Times, Aug.1993.	BB11 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.

Ref	Title	Distinction between reference(s) and claim(s)
CC1	Sumitomo Electric Fiber Optics Corp. "Transceiver Manufacturers to Support Common Footprint for Desktop FDDI Applications," June 23, 1992.	CC1 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
CC2	Sun Microsystems computer Co. et al., Gigabit Interface Converter (GBIC), Rev 4.4, Dec. 1, 1997	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
CC3	Siemens, "Who provides Low-Cost Transceivers for all Standards?" no date.	CC3 through CC5 do not disclose, at least, an optical module comprising a serial connector to transfer serial data.
CC4	AMP "PC Board Connectors", Product Guide 82759, pp. 7104-7108, Catalog E2750 issued Jun. 1991	
CC5	AMP Inc. "Lytel Molded-Optronic SC Duplex Transceiver" Catalog 65922, Dec. 1993.	
CC6	AMPHENOL Engineering News vol. 7 No. 6, pp241, 264-65, Nov. 1994	CC6 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
CC7	Baldwin and Kellerman, "Fiber Optic Module Interface Attachment" Research disclosure, Kenneth Mason Publications Ltd., England, Apr. 1991.	CC7 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
CC8	Block and Gaio "Optical Link Card guide/Retention Sys" RESEARCH DISCLOSURE Kenneth Mason Publications Ltd., England, Apr. 1993.	CC8 and CC9 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
CC9	Cinch Hinge Connectors Catalog CM-16, Jul. 1963.	
CC10	Martin H. Weik, "Communication Standard Dictionary" p.454. definition of LED, Van Nostrand Reinhold Co.	CC10 does not disclose, at least, an optical module comprising a serial connector to transfer serial data.
CC11	Edward R. Salmon, Encapsulation of Electronic Devices and Components, Marcel Dekker Inc., New York, 1987	CC11 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
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DD1	Dieter Gwinner,Conductive Coatings:Vacuum Evaporated Aluminum for Selective Shielding of Plastic Housings,no date.	DD1 through DD3 do not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
DD2	HEADS Up--Sumitomo Electric Lightwave joins Other in Announcement,May 11,1995	
DD3	Robert C. Herron,High Density Input/Output Connector Systems,3M Electronic Products Divisions,1990	
DD4	Shortwave Opto Assembly,IBM OptoElectronic Enterprises; IBM/OEE Market Survey Only, Rev.1,Jan.6,1993	DD4 and DD5 do not disclose, at least, an optical module comprising a serial connector to transfer serial data.
DD5	"Minimizing Electrostatic Discharge Damage to a Cartridge",IBM Technical Disclosure Bulletin, vol. 29 No. 10. Mar.,1987	
DD6	Japanese Standards Association " F04 Type Connectors for Optical Fiber Cords JIS C 5973"Japanese Standards Association,1990.	DD6 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
DD7	Ronald LSoderstrom et al.,A Miniaturized Fiber Optic Laser Receptacle Using a Compact Disk(CD)··· FOC/LAN' 87&MFOC-WEST,pp.383-385,no date.	DD7 through DD9 do not disclose, at least, an optical module comprising a serial connector to transfer serial data.
DD8	"Transceiver Module Assembly", IBM Technical Disclosure Bulletin,Oct.1979,https://www.delphion.com/tbds/tbd ?o=79A+06370,last visited Mar.3,2005.	
DD9	Ronald L.Soderstrom et al.,Optical Components and Electronic Packaging for High Performance Optical Date Links,THE RESEARCH INVESTMENT,p.19-28(no date).	
DD10	Thomas & Betts INFO-LAN Modem 1998	DD10 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected proximate to a first edge of the circuit board.
DD11	"Active component manufacturers lower the cost of fiber to the desktop",Lightwave,Feb. 1994 pp.58,67.	DD11 does not disclose, at least, an optical module comprising a laser diode driver to covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
EE1	Fibre Distributed Date Interface(FDDI)-Token Ring Low-Cost Fibre Physical Layer Medium Dependent (LCF-PMD),American National Standards Institute,1996.	EE1 through EE11 do not disclose, at least, an optical module comprising a laser diode driver to

EE2	Communications Standard Dictionary; p.454,definition of inhomogeneous fiber,Van Nostrand Reinhold Publishing,1983	covert serial data, which a serial connector transfers, into a laser diode electrical signal and to drive a laser diode according to the laser diode electrical signal, producing a laser diode optical signal such that the laser diode transmits the laser diode optical signal.
EE3	"Transmitter/receiver assembly simplifies use of fibre optics", Design Engineering,p.19,Button Press,Ltd.,April 1980.	
EE4	Ronald L.Soderstrom et al., "CD laser as a fiber optic source for computer data links",Fiber Optic Datacom and Computer Networks,SPIE-The International Society for Optical Engineering, Vol.1577,pp.174-181,1988	
EE5	David A.Knodel et al., "Open Fibre Control,a laser safety interlock technique",High-Speed Fiber Networks and Channels,SPIE-The International Society for Optical Engineering Proceedings, Vol.991,pp.179-182,1992	
EE6	"IBM Technical Disclosure Bulletin, Electrostatic Dissipative Enclosed Connector",Vol.34,No.7B,Dec.1991	
EE7	"High Reliability SW Laser For Optical Data Links", LEOS '93 Conference Proceedings, IEEE Lasers and Electro-Optics Society 1993 Annual Meeting;	
EE8	Minimizing Electrostatic Discharge to a Cartridge,IBM Technical Disclosure Bulletin,March 1987, <a href="https://www.delphion.com/tdb?o=87A%2060509">https://www.delphion.com/tdb?o=87A%2060509</a> ,last visited Mar.8,2005.	
EE9	K.P.Jackson et al., "High-Density, Array, Optical Interconnects for Multi-Chip Module Conference MCMC-92 Proceedings,IEEE Computer Society Press.	
EE10	TDB:Stackable Circuit Card Packaging within a Logic Cage,IBM Technical Disclosure Bulletin,Dec.1992, <a href="https://www.delphion.com/tbds/tdb?o=92A%2063485">https://www.delphion.com/tbds/tdb?o=92A%2063485</a> ,last visited Mar.8,2005	
EE11	Jeff Hechi,The Laser Guidebook,2nd ed.,McGraw Hill,Inc.,1992	

Claim Chart for Claims 166-168 of 10/766,488

Ref	Title	Distinction between reference(s) and claim(s)
A1	Re.32,502	A1 through A12 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
A2	USP2,899,669	
A3	USP3,264,601	
A4	USP3,332,860	
A5	USP3,474,380	
A6	USP3,497,866	
A7	USP3,523,269	
A8	USP3,670,290	
A9	USP3,673,545	
A10	USP3,706,869	
A11	USP3,737,729	
A12	USP3,790,923	
A13	USP3,792,284	A13 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
A14	USP3,805,116	A14 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
A15	USP3,809,908	A15 and A16 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
A16	USP3,976,877	

Ref	Title	Distinction between reference(s) and claim(s)
B1	USP3,990,761	B1 through B3 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
B2	USP4,047,242	
B3	USP4,156,903	
B4	USP4,161,650	B4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
B5	USP4,167,303	B5 through B7 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
B6	USP4,176,897	
B7	USP4,217,019	
B8	USP4,217,488	B8 does not disclose, at least, an optical module

		comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
B9	USP4,226,491	B9 and B10 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
B10	USP4,234,968	
B11	USP4,249,266	B11 through B13 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
B12	USP4,252,402	
B13	USP4,257,124	
B14	USP4,268,756	B14 and B15 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
B15	USP4,273,413	
B16	USP4,276,656	B16 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
C1	USP4,294,682	C1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
C2	USP4,295,181	C2 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
C3	USP4,301,543	C3 and C4 do not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected proximate to a first edge of the circuit board.
C4	USP4,330,870	
C5	USP4,345,808	C5 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
C6	USP4,347,655	C6 does not disclose, at least, an optical module comprising a single circuit board, on which a serial



		connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected proximate to a first edge of the circuit board.
C7	USP4,357,606	C7 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
C8	USP4,360,248	C8 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
C9	USP4,366,565	C9 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected proximate to a first edge of the circuit board.
C10	USP4,369,494	C10 through C15 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
C11	USP4,380,360	
C12	USP4,388,671	
C13	USP4,393,516	
C14	USP4,398,073	
C15	USP4,398,780	
C16	USP4,399,563	C16 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected proximate to a first edge of the circuit board.

Ref	Title	Distinction between reference(s) and claim(s)
D1	USP4,408,273	D1 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
D2	USP4,422,088	D2 through D4 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
D3	USP4,427,879	
D4	USP4,430,699	
D5	USP4,434,537	D5 does not disclose, at least, an optical module

		comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
D6	USP4,437,190	D6 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
D7	USP4,439,006	D7 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected proximate to a first edge of the circuit board.
D8	USP4,446,515	D8 and D9 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
D9	USP4,449,244	
D10	USP4,449,784	D10 through D13 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
D11	USP4,453,903	
D12	USP4,459,658	
D13	USP4,461,537	
D14	USP4,470,154	D14 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
D15	USP4,486,059	D15 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
D16	USP4,493,113	D16 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
E1	USP4,501,021	E1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
E2	USP4,502,130	E2 through E5 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a
E3	USP4,505,035	
E4	USP4,506,937	

E5	USP4,510,553	laser diode optical signal based on a laser diode electrical signal.
E6	USP4,511,207	E6 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected proximate to a first edge of the circuit board.
E7	USP4,514,586	E7 through E14 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
E8	USP4,516,204	
E9	USP4,519,670	
E10	USP4,519,672	
E11	USP4,519,673	
E12	USP4,522,463	
E13	USP4,526,438	
E14	USP4,526,986	
E15	USP4,527,286	E15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
E16	USP4,529,266	E16 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
F1	USP4,530,566	F1 through F3 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
F2	USP4,531,810	
F3	USP4,533,208	
F4	USP4,533,209	F4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
F5	USP4,534,616	F5 through F8 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
F6	USP4,534,617	
F7	USP4,535,233	
F8	USP4,537,468	
F9	USP4,539,476	F9 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.

F10	USP4,540,237	F10 through F16 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
F11	USP4,540,246	
F12	USP4,541,036	
F13	USP4,541,685	
F14	USP4,542,076	
F15	USP4,544,231	
F16	USP4,544,233	

Ref	Title	Distinction between reference(s) and claim(s)
G1	USP4,544,234	G1 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
G2	USP4,545,074	G2 and G3 do not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected proximate to a first edge of the circuit board.
G3	USP4,545,077	
G4	USP4,545,642	G4 through G8 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
G5	USP4,545,643	
G6	USP4,545,644	
G7	USP4,545,645	
G8	USP4,548,465	
G9	USP4,548,466	G9 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
G10	USP4,548,467	G10 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
G11	USP4,549,782	G11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
G12	USP4,549,783	G12 through G14 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
G13	USP4,550,975	
G14	USP4,553,811	
G15	USP4,553,813	G15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector

		transfers, into a laser diode electrical signal.
G16	USP4,553,814	G16 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
H1	USP4,556,279	H1 through H10 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
H2	USP4,556,281	
H3	USP4,556,282	
H4	USP4,557,551	
H5	USP4,560,234	
H6	USP4,563,057	
H7	USP4,566,753	
H8	USP4,568,145	
H9	USP4,569,569	
H10	USP4,573,760	
H11	USP4,580,295	H11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
H12	USP4,580,872	H12 through H16 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
H13	USP4,588,256	
H14	USP4,589,728	
H15	USP4,597,631	
H16	USP4,614,836	

Ref	Title	Distinction between reference(s) and claim(s)
I1	USP4,629,270	I1 and I2 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
I2	USP4,634,239	
I3	USP4,641,371	I3 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected proximate to a first edge of the circuit board.
I4	USP4,647,148	I4 through I16 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode
I5	USP4,652,976	
I6	USP4,663,240	
I7	USP4,663,603	

I8	USP4,678,264	electrical signal.
I9	USP4,679,883	
I10	USP4,695,106	
I11	USP4,697,864	
I12	USP4,708,433	
I13	USP4,715,675	
I14	USP4,720,630	
I15	USP4,722,584	
I16	USP4,736,100	

Ref	Title	Distinction between reference(s) and claim(s)
J1	USP4,756,593	J1 through J15 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
J2	USP4,762,388	
J3	USP4,767,179	
J4	USP4,772,931	
J5	USP4,779,952	
J6	USP4,789,218	
J7	USP4,798,430	
J8	USP4,798,440	
J9	USP4,807,006	
J10	USP4,807,955	
J11	USP4,808,115	
J12	USP4,811,165	
J13	USP4,812,133	
J14	USP4,821,145	
J15	USP4,823,235	
J16	USP4,838,630	J16 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
K1	USP4,840,451	K1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
K2	USP4,844,581	K2 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected proximate to a first edge of the circuit board.

K3	USP4,847,711	K3 through K9 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
K4	USP4,847,771	
K5	USP4,849,944	
K6	USP4,857,002	
K7	USP4,862,327	
K8	USP4,872,212	
K9	USP4,872,736	
K10	USP4,881,789	K10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
K11	USP4,884,336	K11 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
K12	USP4,897,711	K12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
K13	USP4,906,197	K13 through K16 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
K14	USP4,927,225	
K15	USP4,944,568	
K16	USP4,945,448	

Ref	Title	Distinction between reference(s) and claim(s)
L1	USP4,953,929	L1 through L4 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
L2	USP4,955,817	
L3	USP4,963,104	
L4	USP4,967,312	
L5	USP4,977,329	L5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
L6	USP4,979,793	L6 and L7 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
L7	USP4,979,794	
L8	USP4,986,625	L8 and L9 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
L9	USP4,989,934	

L10	USP4,990,104	L10 through L16 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
L11	USP4,991,062	
L12	USP5,002,495	
L13	USP5,004,434	
L14	USP5,006,286	
L15	USP5,011,425	
L16	USP5,029,254	

Ref	Title	Distinction between reference(s) and claim(s)
M1	USP5,035,482	M1 through M4 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
M2	USP5,035,641	
M3	USP5,040,993	
M4	USP5,041,025	
M5	USP5,043,775	M5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
M6	USP5,044,982	M6 through M14 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
M7	USP5,045,635	
M8	USP5,045,971	
M9	USP5,046,955	
M10	USP5,060,373	
M11	USP5,071,219	
M12	USP5,076,656	
M13	USP5,076,688	
M14	USP5,082,344	
M15	USP5,084,802	M15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
M16	USP5,086,422	M16 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
N1	USP5,091,991	N1 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
N2	USP5,093,879	N2 does not disclose, at least, an optical module comprising a laser diode electrical signal converter



		to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
N3	USP5,094,623	N3 through N8 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
N4	USP5,101,463	
N5	USP5,104,243	
N6	USP5,107,404	
N7	USP5,108,294	
N8	USP5,109,453	
N9	USP5,113,467	N9 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
N10	USP5,116,239	N10 through N14 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
N11	USP5,117,476	
N12	USP5,118,362	
N13	USP5,118,904	
N14	USP5,120,578	
N15	USP5,122,893	N15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
N16	USP5,124,885	N16 and N17 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
N17	USP5,125,849	
N18	USP5,127,071	N18 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
N19	USP5,132,871	N19 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
O1	USP5,134,677	O1 through O3 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
O2	USP5,134,679	
O3	USP5,136,063	
O4	USP5,136,152	O4 and O5 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
O5	USP5,136,603	

O6	USP5,138,537	O6 through O8 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
O7	USP5,138,678	
O8	USP5,140,663	
O9	USP5,155,786	O9 and O10 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
O10	USP5,157,769	
O11	USP5,167,139	O11 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
O12	USP5,168,537	O12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
O13	USP5,170,146	O13 through O17 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
O14	USP5,171,167	
O15	USP5,173,059	
O16	USP5,183,404	
O17	USP5,183,405	

Ref	Title	Distinction between reference(s) and claim(s)
P1	USP5,195,911	P1 through P4 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
P2	USP5,202,536	
P3	USP5,207,597	
P4	USP5,212,752	
P5	USP5,212,754	P5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
P6	USP5,218,519	P6 through P11 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
P7	USP5,225,760	
P8	USP5,233,676	
P9	USP5,233,674	
P10	USP5,234,353	
P11	USP5,238,426	
P12	USP5,241,614	P12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
P13	USP5,247,532	P13 does not disclose, at least, an optical module

		comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected proximate to a first edge of the circuit board.
P14	USP5,259,052	P14 through P16 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
P15	USP5,259,054	
P16	USP5,262,923	
P17	USP5,271,079	P17 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
Q1	USP5,274,729	Q1 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
Q2	USP5,285,466	Q2 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
Q3	USP5,285,511	Q3 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
Q4	USP5,285,512	Q4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
Q5	USP5,286,207	Q5 through Q16 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
Q6	USP5,286,247	
Q7	USP5,288,247	
Q8	USP5,289,347	
Q9	USP5,296,813	
Q10	USP5,299,089	
Q11	USP5,304,069	
Q12	USP5,305,182	
Q13	USP5,311,408	
Q14	USP5,315,679	
Q15	USP5,317,663	
Q16	USP5,321,819	

Ref	Title	Distinction between reference(s) and claim(s)
R1	USP5,329,604	R1 through R3 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
R2	USP5,333,221	
R3	USP5,333,225	
R4	USP5,337,391	R4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
R5	USP5,337,396	R5 and R6 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
R6	USP5,340,340	
R7	USP5,345,524	R7 and R8 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
R8	USP5,345,530	
R9	USP5,353,364	R9 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected proximate to a first edge of the circuit board.
R10	USP5,353,634	R10 through R12 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
R11	USP5,356,300	
R12	USP5,357,402	
R13	USP5,361,244	R13 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
R14	USP5,361,318	R14 through R16 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
R15	USP5,366,664	
R16	USP5,372,515	

Ref	Title	Distinction between reference(s) and claim(s)
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S1	USP5,375,040	S1 through S9 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
S2	USP5,383,793	
S3	USP5,388,995	
S4	USP5,390,268	
S5	USP5,393,249	
S6	USP5,397,242	
S7	USP5,398,154	
S8	USP5,398,295	
S9	USP5,408,384	
S10	USP5,414,787	S10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
S11	USP5,416,668	S11 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
S12	USP5,416,870	S12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
S13	USP5,416,872	S13 through S16 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
S14	USP5,419,717	
S15	USP5,424,573	
S16	USP5,428,703	

Ref	Title	Distinction between reference(s) and claim(s)
T1	USP5,428,704	T1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
T2	USP5,434,747	T2 and T3 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
T3	USP5,443,390	
T4	USP5,446,814	T4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
T5	USP5,452,387	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

T6	USP5,454,080	T6 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
T7	USP5,455,703	T7 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
T8	USP5,463,532	T8 and T9 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
T9	USP5,469,332	
T10	USP5,470,257	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T11	USP5,470,259	
T12	USP5,475,734	T12 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
T13	USP5,477,418	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T14	USP5,478,253	
T15	USP5,478,259	T15 and T16 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
T16	USP5,478,260	

Ref	Title	Distinction between reference(s) and claim(s)
U1	USP5,481,634	U1 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
U2	USP5,482,658	U2 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
U3	USP5,487,678	U3 and U4 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
U4	USP5,491,613	

U5	USP5,491,712	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U6	USP5,494,747	U6 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
U7	USP5,499,311	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U8	USP5,499,312	U8 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
U9	USP5,504,657	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U10	USP5,506,921	U10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
U11	USP5,506,922	U11 through U14 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
U12	USP5,507,668	
U13	USP5,526,235	
U14	USP5,527,991	
U15	USP5,534,662	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U16	USP5,535,296	

Ref	Title	Distinction between reference(s) and claim(s)
V1	USP5,535,364	V1 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
V2	USP5,545,845	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V3	USP5,546,281	
V4	USP5,547,385	
V5	USP5,548,641	V5 does not disclose, at least, an optical module comprising a laser diode module comprising a laser

		diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
V6	USP5,548,677	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V7	USP5,554,031	V7 through V9 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
V8	USP5,554,037	
V9	USP5,567,167	
V10	USP5,577,064	V10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
V11	USP5,580,269	V11 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
V12	USP5,588,850	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V13	USP5,598,319	V13 and V14 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
V14	USP5,599,595	
V15	USP5,600,470	V15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
V16	USP5,613,860	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
W1	USP5,629,919	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
W2	USP5,631,998	
W3	USP5,653,596	
W4	USP5,659,459	W4 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical



		signal based on a laser diode electrical signal.
W5	USP5,675,428	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
W6	USP5,687,267	
W7	USP5,717,533	
W8	USP5,724,729	
W9	USP5,726,864	
W10	USP5,734,558	
W11	USP5,736,782	
W12	USP5,747,735	
W13	USP5,767,999	
W14	USP5,779,504	
W15	USP5,797,771	
W16	USP5,836,774	

Ref	Title	Distinction between reference(s) and claim(s)
X1	USP5,864,468	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
X2	USP5,879,173	
X3	DE.4239124 A1	X3 through X6 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
X4	EP 0 232792 A1	
X5	EP.0 228 278	
X6	EP.0 305112 A2	
X7	EP.0 314 651 A2	X7 and X8 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
X8	EP.0 413 489 A2	
X9	EP.0 437 161 A2	X9 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
X10	EP.0 456 298 B1	X10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
X11	EP.0 530 791 A2	X11 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
X12	EP.0 535 473 A1	X12 through X14 do not disclose, at least, an optical module comprising a laser diode electrical
X13	EP.0 588 014 A2	

X14	EP.0 600 645 A1	signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
X15	EP.0 613 032 A2	X15 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected proximate to a first edge of the circuit board.
X16	EP.0 652 696 A1	X16 through X18 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
X17	EP.0 656 696 A1	
X18	EP.0 662 259 B1	
X19	EP.442 608 A2	X19 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
X20	WO 94/12900	X20 and X21 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
X21	JP.1-237783	

Ref	Title	Distinction between reference(s) and claim(s)
Y1	JP.2-151084	Y1 through Y4 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
Y2	JP.2-181710	
Y3	JP.2-278212	
Y4	JP.2-87837	
Y5	JP.3-20458	Y5 through Y7 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
Y6	JP.3-94869	
Y7	JP.4-109593	
Y8	JP.4-122905	Y8 through Y10 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
Y9	JP.4-165312	
Y10	JP.4-211208	
Y11	JP.4-221207	Y11 through Y13 do not disclose, at least, an optical module comprising a laser diode module
Y12	JP.4-229962	

Y13	JP.4-230978	comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
Y14	JP.4-234715	Y14 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
Y15	JP.4-270305	Y15 through Y18 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
Y16	JP.4-50901	
Y17	JP.4-87809	
Y18	JP.5-052802	
Y19	JP.5-134147	Y19 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
Z1	JP.5-152607	Z1 and Z2 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
Z2	JP.5-188250	
Z3	JP.5-211379	Z3 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
Z4	JP.5-218581	Z4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
Z5	JP.5-290913	Z5 through Z8 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
Z6	JP.5-70955	
Z7	JP.61-158046	
Z8	JP.61-188385	
Z9	JP.63-009325	Z9 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected proximate to a first edge of the circuit board.
Z10	JP.63-16496	Z10 through Z19 do not disclose, at least, an optical module comprising a laser diode module
Z11	JP.63-65967	

Z12	JP.63-65978	comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
Z13	JP.63-82998	
Z14	U-3-20458	
Z15	U-3-94869	
Z16	U-4-87809	
Z17	U-5-052802	
Z18	U-5-70955	
Z19	U-61-158046	

Ref	Title	Distinction between reference(s) and claim(s)
AA1	U-61-188385	AA1 through AA5 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
AA2	U-63-16496	
AA3	U-63-65967	
AA4	U-63-65978	
AA5	U-63-82998	

Ref	Title	Distinction between reference(s) and claim(s)
BB1	AT&T Microelectronics, "1408-Type ODL Transceiver"Feb. 1994 preliminary data sheet.p.2-10	BB1 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
BB2	Ronald LSoderstrom et al., "An optical Data Link using a CD laser", SPIE Vol.1577 High Speed Fiber Networks and Channels,pp.163-173,1991	BB2 through BB4 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
BB3	BCP, Inc. "Gigabits Over Multimode Optical Fiber"no date	
BB4	Ronald L.Soderstrom et al., "CD laser optical Data Links for Workstation and Midrange Computers", IEEE p.505-509, 1993.	
BB5	FDDI Low-Cost Fiber Physical Layer Medium Dependent (LCF-PMD) Common Receiver Footprint, no date.	BB5 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected proximate to a first edge of the circuit board.
BB6	HP Module HFBR-5103, FDDI Data Sheet, <a href="http://www.hp.com/HP-COMP/fiber/hfbr5103.html">http://www.hp.com/HP-COMP/fiber/hfbr5103.html</a> , Jun. 11, 1998	BB6 and BB7 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
BB7	IBM Technical Disclosure Bulletin "Optical Link Card Guide/Retention System". <a href="http://www.patents.ibm.com/tdbs/tdb?&amp;order=93A+60964">www.patents.ibm.com/tdbs/tdb?&amp;order=93A+60964</a> , April 1993	
BB8	IBM, "A Proposal for a New High Performance... "Optoelectronics Enterprise Oct.1992 ANSI Meeting, Oct.13, 1992	BB8 and BB9 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
BB9	IBM, et al, "GLM Family", FCSI-301-Ren Sun, GLM, ,,,,,, FCSI-301-Rev1.0, Feb. 16, 1994.	
BB10	Methode Electronics, Inc., "DM 1063-DBLM9	BB10 does not disclose, at least, an optical module

	Copper Gigabit Link Module" data sheet.(no date)	comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
BB11	"Raylan Joins Low-Wavelength Push -850 nm Transceiver",Electronic Engineering Times,Aug.1993.	BB11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
CC1	Sumitomo Electric Fiber Optics Corp. "Transceiver Manufacturers to Support Common Footprint for Desktop FDDI Applications, " June 23, 1992.	CC1 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
CC2	Sun Microsystems computer Co. et al., Gigabit Interface Converter (GBIC), Rev 4.4, Dec. 1, 1997	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
CC3	Siemens, "Who provides Low-Cost Transceivers for all Standards?" no date.	CC3 through CC5 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
CC4	AMP "PC Board Connectors", Product Guide 82759, pp. 7104-7108, Catalog E2750 issued Jun. 1991	
CC5	AMP Inc. "Lyte! Molded-Optronic SC Duplex Transceiver" Catalog 65922,Dec.1993.	
CC6	AMPHENOL Engineering News vol. 7 No. 6. , pp241, 264-65, Nov. 1994	CC6 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
CC7	Baldwin and Kellerman, "Fiber Optic Module Interface Attachment" Research disclosure,Kenneth Mason Publications Ltd.,England,Apr.1991.	CC7 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
CC8	Block and Gaio "Optical Link Card guide/Retention Sys" RESEARCH DISCLOSURE Kenneth Mason Publications Ltd.,England,Apr.1993.	CC8 and CC9 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
CC9	Cinch Hinge Connectors Catalog CM-16, Jul. 1963.	
CC10	Martin H. Weik,"Communication Standard Dictionary"p.454.definition of LED,Van Nostrand Reinhold Co.	CC10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
CC11	Edward R.Salmon,Encapsulation of Electronic Devices and Components,Marcel Deckker Inc.,New York,1987	CC11 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
DD1	Dieter Gwinner,Conductive Coatings:Vacuum Evaporated Aluminum for Selective Shielding of Plastic Housings,no date.	DD1 through DD3 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
DD2	HEADS Up--Sumitomo Electric Lightwave joins Other in Announcement,May 11,1995	
DD3	Robert C. Herron,High Density Input/Output Connector Systems,3M Electronic Products Divisions,1990	
DD4	Shortwave Opto Assembly,IBM OptoElectronic Enterprises; IBM/OEE Market Survey Only, Rev.1,Jan.6,1993	DD4 and DD5 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
DD5	"Minimizing Electrostatic Discharge Damage to a Cartridge",IBM Technical Disclosure Bulletin, vol. 29 No. 10. Mar.,1987	
DD6	Japanese Standards Association " F04 Type Connectors for Optical Fiber Cords JIS C 5973"Japanese Standards Association,1990.	DD6 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
DD7	Ronald LSoderstrom et al.,A Miniaturized Fiber Optic Laser Receptacle Using a Compact Disk(CD)··· FOC/LAN`87&MFOC-WEST,pp.383-385,no date.	DD7 through DD9 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, which a serial connector transfers, into a laser diode electrical signal.
DD8	"Transceiver Module Assembly", IBM Technical Disclosure Bulletin,Oct.1979, <a href="https://www.delphion.com/tbds/tdb?o=79A+06370">https://www.delphion.com/tbds/tdb?o=79A+06370</a> ,last visited Mar.3,2005.	
DD9	Ronald L.Soderstrom et al.,Optical Components and Electronic Packaging for High Performance Optical Data Links,THE RESEARCH INVESTMENT,p.19-28(no date).	
DD10	Thomas & Betts INFO-LAN Modem 1998	DD10 does not disclose, at least, an optical module comprising a single circuit board, on which a serial connector and a laser diode electrical signal converter are mounted and to which a laser diode and a photo diode module are electrically connected proximate to a first edge of the circuit board.
DD11	"Active component manufacturers lower the cost of fiber to the desktop",Lightwave,Feb.1994 pp.58,67.	DD11 does not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
EE1	Fibre Distributed Data Interface(FDDI)-Token Ring Low-Cost Fibre Physical Layer Medium Dependent (LCF-PMD),American National Standards Institute,1996.	EE1 through EE11 do not disclose, at least, an optical module comprising a laser diode module comprising a laser diode to produce and transmit a laser diode optical signal based on a laser diode electrical signal.
EE2	Communications Standard Dictionary; p.454,definition of inhomogeneous fiber,Van Nostrand Reinhold Publishing,1983	
EE3	"Transmitter/receiver assembly simplifies use of fibre optics", Design Engineering,p.19,Button Press,Ltd.,April 1980.	

EE4	Ronald L.Soderstrom et al., "CD laser as a fiber optic source for computer data links", Fiber Optic Datacom and Computer Networks, SPIE-The International Society for Optical Engineering, Vol.1577, pp.174-181, 1988	
EE5	David A.Knodel et al., "Open Fibre Control, a laser safety interlock technique", High-Speed Fiber Networks and Channels, SPIE-The International Society for Optical Engineering Proceedings, Vol.991, pp.179-182, 1992	
EE6	"IBM Technical Disclosure Bulletin, Electrostatic Dissipative Enclosed Connector", Vol.34, No.7B, Dec. 1991	
EE7	"High Reliability SW Laser For Optical Data Links", LEOS '93 Conference Proceedings, IEEE Lasers and Electro-Optics Society 1993 Annual Meeting;	
EE8	Minimizing Electrostatic Discharge to a Cartridge, IBM Technical Disclosure Bulletin, March 1987, <a href="https://www.delphion.com/tdb?o=87A%2060509">https://www.delphion.com/tdb?o=87A%2060509</a> , last visited Mar.8, 2005.	
EE9	K.P.Jackson et al., "High-Density, Array, Optical Interconnects for Multi-Chip Module Conference MCMC-92 Proceedings, IEEE Computer Society Press.	
EE10	TDB: Stackable Circuit Card Packaging within a Logic Cage, IBM Technical Disclosure Bulletin, Dec. 1992, <a href="https://www.delphion.com/tbds/tdb?o=92A%2063485">https://www.delphion.com/tbds/tdb?o=92A%2063485</a> , last visited Mar.8, 2005	
EE11	Jeff Hechi, The Laser Guidebook, 2nd ed., McGraw Hill, Inc., 1992	





Claim Chart for Claim 170 of 10/766,488

Ref	Title	Distinction between reference(s) and claim(s)
A1	Re.32,502	A1 through A12 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
A2	USP2,899,669	
A3	USP3,264,601	
A4	USP3,332,860	
A5	USP3,474,380	
A6	USP3,497,866	
A7	USP3,523,269	
A8	USP3,670,290	
A9	USP3,673,545	
A10	USP3,706,869	
A11	USP3,737,729	
A12	USP3,790,923	
A13	USP3,792,284	A13 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
A14	USP3,805,116	A14 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
A15	USP3,809,908	A15 and A16 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
A16	USP3,976,877	

Ref	Title	Distinction between reference(s) and claim(s)
B1	USP3,990,761	B1 through B3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
B2	USP4,047,242	
B3	USP4,156,903	
B4	USP4,161,650	B4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
B5	USP4,167,303	B5 through B7 do not disclose, at least, an optical module comprising a laser diode module to convert
B6	USP4,176,897	

B7	USP4,217,019	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
B8	USP4,217,488	B8 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
B9	USP4,226,491	B9 and B10 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
B10	USP4,234,968	
B11	USP4,249,266	B11 through B13 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
B12	USP4,252,402	
B13	USP4,257,124	
B14	USP4,268,756	B14 and B15 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
B15	USP4,273,413	
B16	USP4,276,656	B16 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
C1	USP4,294,682	C1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
C2	USP4,295,181	C2 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
C3	USP4,301,543	C3 and C4 do not disclose, at least, an optical

C4	USP4,330,870	module comprising a single circuit board mounting thereon a serial connector, a laser diode electrical signal converter and an integrated circuit electrically coupled to a photo diode to produce serial data.
C5	USP4,345,808	C5 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
C6	USP4,347,655	C6 does not disclose, at least, an optical module comprising a single circuit board mounting thereon a serial connector, a laser diode electrical signal converter and an integrated circuit electrically coupled to a photo diode to produce serial data.
C7	USP4,357,606	C7 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
C8	USP4,360,248	C8 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
C9	USP4,366,565	C9 does not disclose, at least, an optical module comprising a single circuit board mounting thereon a serial connector, a laser diode electrical signal converter and an integrated circuit electrically coupled to a photo diode to produce serial data.
C10	USP4,369,494	C10 through C15 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
C11	USP4,380,360	
C12	USP4,388,671	
C13	USP4,393,516	
C14	USP4,398,073	
C15	USP4,398,780	
C16	USP4,399,563	C16 does not disclose, at least, an optical module comprising a single circuit board mounting thereon a serial connector, a laser diode electrical signal converter and an integrated circuit electrically coupled to a photo diode to produce serial data.

Ref	Title	Distinction between reference(s) and claim(s)
D1	USP4,408,273	D1 does not disclose, at least, an optical module

		comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
D2	USP4,422,088	D2 through D4 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
D3	USP4,427,879	
D4	USP4,430,699	
D5	USP4,434,537	D5 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
D6	USP4,437,190	D6 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
D7	USP4,439,006	D7 does not disclose, at least, an optical module comprising a single circuit board mounting thereon a serial connector, a laser diode electrical signal converter and an integrated circuit electrically coupled to a photo diode to produce serial data.
D8	USP4,446,515	D8 and D9 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
D9	USP4,449,244	
D10	USP4,449,784	D10 through D13 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
D11	USP4,453,903	
D12	USP4,459,658	
D13	USP4,461,537	
D14	USP4,470,154	D14 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
D15	USP4,486,059	D15 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
D16	USP4,493,113	D16 does not disclose, at least, an optical module comprising a laser diode electrical signal converter

		to convert serial data, received from a motherboard, into a laser diode electrical signal.
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Ref	Title	Distinction between reference(s) and claim(s)
E1	USP4,501,021	E1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
E2	USP4,502,130	E2 through E5 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
E3	USP4,505,035	
E4	USP4,506,937	
E5	USP4,510,553	
E6	USP4,511,207	E6 does not disclose, at least, an optical module comprising a single circuit board mounting thereon a serial connector, a laser diode electrical signal converter and an integrated circuit electrically coupled to a photo diode to produce serial data.
E7	USP4,514,586	E7 through E14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
E8	USP4,516,204	
E9	USP4,519,670	
E10	USP4,519,672	
E11	USP4,519,673	
E12	USP4,522,463	
E13	USP4,526,438	
E14	USP4,526,986	
E15	USP4,527,286	E15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
E16	USP4,529,266	E16 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
F1	USP4,530,566	F1 through F3 do not disclose, at least, an optical module comprising a laser diode module to convert
F2	USP4,531,810	

F3	USP4,533,208	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
F4	USP4,533,209	F4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
F5	USP4,534,616	F5 through F8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
F6	USP4,534,617	
F7	USP4,535,233	
F8	USP4,537,468	
F9	USP4,539,476	F9 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
F10	USP4,540,237	F10 through F16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
F11	USP4,540,246	
F12	USP4,541,036	
F13	USP4,541,685	
F14	USP4,542,076	
F15	USP4,544,231	
F16	USP4,544,233	

Ref	Title	Distinction between reference(s) and claim(s)
G1	USP4,544,234	G1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
G2	USP4,545,074	G2 and G3 do not disclose, at least, an optical module comprising a single circuit board mounting thereon a serial connector, a laser diode electrical signal converter and an integrated circuit electrically coupled to a photo diode to produce serial data.
G3	USP4,545,077	
G4	USP4,545,642	G4 through G8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
G5	USP4,545,643	
G6	USP4,545,644	
G7	USP4,545,645	
G8	USP4,548,465	

G9	USP4,548,466	G9 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
G10	USP4,548,467	G10 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
G11	USP4,549,782	G11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
G12	USP4,549,783	G12 through G14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
G13	USP4,550,975	
G14	USP4,553,811	
G15	USP4,553,813	G15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
G16	USP4,553,814	G16 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
H1	USP4,556,279	H1 through H10 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
H2	USP4,556,281	
H3	USP4,556,282	
H4	USP4,557,551	
H5	USP4,560,234	
H6	USP4,563,057	
H7	USP4,566,753	
H8	USP4,568,145	
H9	USP4,569,569	
H10	USP4,573,760	
H11	USP4,580,295	H11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard,

		into a laser diode electrical signal.
H12	USP4,580,872	H12 through H16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
H13	USP4,588,256	
H14	USP4,589,728	
H15	USP4,597,631	
H16	USP4,614,836	

Ref	Title	Distinction between reference(s) and claim(s)
I1	USP4,629,270	I1 and I2 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
I2	USP4,634,239	
I3	USP4,641,371	I3 does not disclose, at least, an optical module comprising a single circuit board mounting thereon a serial connector, a laser diode electrical signal converter and an integrated circuit electrically coupled to a photo diode to produce serial data.
I4	USP4,647,148	I4 through I16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
I5	USP4,652,976	
I6	USP4,663,240	
I7	USP4,663,603	
I8	USP4,678,264	
I9	USP4,679,883	
I10	USP4,695,106	
I11	USP4,697,864	
I12	USP4,708,433	
I13	USP4,715,675	
I14	USP4,720,630	
I15	USP4,722,584	
I16	USP4,736,100	

Ref	Title	Distinction between reference(s) and claim(s)
J1	USP4,756,593	J1 through J15 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
J2	USP4,762,388	
J3	USP4,767,179	
J4	USP4,772,931	
J5	USP4,779,952	
J6	USP4,789,218	
J7	USP4,798,430	
J8	USP4,798,440	



J9	USP4,807,006	
J10	USP4,807,955	
J11	USP4,808,115	
J12	USP4,811,165	
J13	USP4,812,133	
J14	USP4,821,145	
J15	USP4,823,235	
J16	USP4,838,630	J16 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
K1	USP4,840,451	K1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
K2	USP4,844,581	K2 does not disclose, at least, an optical module comprising a single circuit board mounting thereon a serial connector, a laser diode electrical signal converter and an integrated circuit electrically coupled to a photo diode to produce serial data.
K3	USP4,847,711	K3 through K9 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
K4	USP4,847,771	
K5	USP4,849,944	
K6	USP4,857,002	
K7	USP4,862,327	
K8	USP4,872,212	
K9	USP4,872,736	
K10	USP4,881,789	K10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
K11	USP4,884,336	K11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
K12	USP4,897,711	K12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
K13	USP4,906,197	K13 through K16 do not disclose, at least, an optical module comprising a laser diode module to
K14	USP4,927,225	

K15	USP4,944,568	convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
K16	USP4,945,448	

Ref	Title	Distinction between reference(s) and claim(s)
L1	USP4,953,929	L1 through L4 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
L2	USP4,955,817	
L3	USP4,963,104	
L4	USP4,967,312	
L5	USP4,977,329	L5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
L6	USP4,979,793	L6 and L7 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
L7	USP4,979,794	
L8	USP4,986,625	L8 and L9 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
L9	USP4,989,934	
L10	USP4,990,104	L10 through L16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
L11	USP4,991,062	
L12	USP5,002,495	
L13	USP5,004,434	
L14	USP5,006,286	
L15	USP5,011,425	
L16	USP5,029,254	

Ref	Title	Distinction between reference(s) and claim(s)
M1	USP5,035,482	M1 through M4 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
M2	USP5,035,641	
M3	USP5,040,993	
M4	USP5,041,025	
M5	USP5,043,775	M5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard,

		into a laser diode electrical signal.
M6	USP5,044,982	M6 through M14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
M7	USP5,045,635	
M8	USP5,045,971	
M9	USP5,046,955	
M10	USP5,060,373	
M11	USP5,071,219	
M12	USP5,076,656	
M13	USP5,076,688	
M14	USP5,082,344	
M15	USP5,084,802	M15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
M16	USP5,086,422	M16 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
N1	USP5,091,991	N1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
N2	USP5,093,879	N2 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
N3	USP5,094,623	N3 through N8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
N4	USP5,101,463	
N5	USP5,104,243	
N6	USP5,107,404	
N7	USP5,108,294	
N8	USP5,109,453	
N9	USP5,113,467	N9 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
N10	USP5,116,239	N10 through N14 do not disclose, at least, an optical module comprising a laser diode module to
N11	USP5,117,476	

N12	USP5,118,362	convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
N13	USP5,118,904	
N14	USP5,120,578	
N15	USP5,122,893	N15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
N16	USP5,124,885	N16 and N17 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
N17	USP5,125,849	
N18	USP5,127,071	N18 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
N19	USP5,132,871	N19 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
O1	USP5,134,677	O1 through O3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
O2	USP5,134,679	
O3	USP5,136,063	
O4	USP5,136,152	O4 and O5 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
O5	USP5,136,603	
O6	USP5,138,537	O6 through O8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
O7	USP5,138,678	
O8	USP5,140,663	
O9	USP5,155,786	O9 and O10 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
O10	USP5,157,769	

O11	USP5,167,139	O11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
O12	USP5,168,537	O12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
O13	USP5,170,146	O13 through O17 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
O14	USP5,171,167	
O15	USP5,173,059	
O16	USP5,183,404	
O17	USP5,183,405	

Ref	Title	Distinction between reference(s) and claim(s)
P1	USP5,195,911	P1 through P4 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
P2	USP5,202,536	
P3	USP5,207,597	
P4	USP5,212,752	
P5	USP5,212,754	P5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
P6	USP5,218,519	P6 through P11 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
P7	USP5,225,760	
P8	USP5,233,676	
P9	USP5,233,674	
P10	USP5,234,353	
P11	USP5,238,426	
P12	USP5,241,614	P12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
P13	USP5,247,532	P13 does not disclose, at least, an optical module comprising a single circuit board mounting thereon a serial connector, a laser diode electrical signal converter and an integrated circuit electrically coupled to a photo diode to produce serial data.
P14	USP5,259,052	P14 through P16 do not disclose, at least, an optical module comprising a laser diode module to convert
P15	USP5,259,054	

P16	USP5,262,923	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
P17	USP5,271,079	P17 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
Q1	USP5,274,729	Q1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
Q2	USP5,285,466	Q2 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
Q3	USP5,285,511	Q3 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
Q4	USP5,285,512	Q4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
Q5	USP5,286,207	Q5 through Q16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
Q6	USP5,286,247	
Q7	USP5,288,247	
Q8	USP5,289,347	
Q9	USP5,296,813	
Q10	USP5,299,089	
Q11	USP5,304,069	
Q12	USP5,305,182	
Q13	USP5,311,408	
Q14	USP5,315,679	
Q15	USP5,317,663	
Q16	USP5,321,819	

Ref	Title	Distinction between reference(s) and claim(s)
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R1	USP5,329,604	R1 through R3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
R2	USP5,333,221	
R3	USP5,333,225	
R4	USP5,337,391	R4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
R5	USP5,337,396	R5 and R6 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
R6	USP5,340,340	
R7	USP5,345,524	R7 and R8 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
R8	USP5,345,530	
R9	USP5,353,364	R9 does not disclose, at least, an optical module comprising a single circuit board mounting thereon a serial connector, a laser diode electrical signal converter and an integrated circuit electrically coupled to a photo diode to produce serial data.
R10	USP5,353,634	R10 through R12 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
R11	USP5,356,300	
R12	USP5,357,402	
R13	USP5,361,244	R13 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
R14	USP5,361,318	R14 through R16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
R15	USP5,366,664	
R16	USP5,372,515	

Ref	Title	Distinction between reference(s) and claim(s)
S1	USP5,375,040	S1 through S9 do not disclose, at least, an optical module comprising a laser diode module to convert
S2	USP5,383,793	

S3	USP5,388,995	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
S4	USP5,390,268	
S5	USP5,393,249	
S6	USP5,397,242	
S7	USP5,398,154	
S8	USP5,398,295	
S9	USP5,408,384	S10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
S10	USP5,414,787	
S11	USP5,416,668	
S12	USP5,416,870	
S13	USP5,416,872	
S14	USP5,419,717	
S15	USP5,424,573	S11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
S16	USP5,428,703	
S12	USP5,416,870	S12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
S13	USP5,416,872	S13 through S16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
S14	USP5,419,717	
S15	USP5,424,573	
S16	USP5,428,703	

Ref	Title	Distinction between reference(s) and claim(s)
T1	USP5,428,704	T1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
T2	USP5,434,747	T2 and T3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
T3	USP5,443,390	
T4	USP5,446,814	T4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
T5	USP5,452,387	This reference does not qualify as prior art. Applicants have claimed priority to Japanese



		Application No. 06-086691, filed on April 25, 1994, in Japan.
T6	USP5,454,080	T6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
T7	USP5,455,703	T7 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
T8	USP5,463,532	T8 and T9 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
T9	USP5,469,332	
T10	USP5,470,257	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T11	USP5,470,259	
T12	USP5,475,734	T12 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
T13	USP5,477,418	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T14	USP5,478,253	
T15	USP5,478,259	T15 and T16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
T16	USP5,478,260	

Ref	Title	Distinction between reference(s) and claim(s)
U1	USP5,481,634	U1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of

		1000 Mbits/s or more.
U2	USP5,482,658	U2 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
U3	USP5,487,678	U3 and U4 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
U4	USP5,491,613	
U5	USP5,491,712	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U6	USP5,494,747	U6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
U7	USP5,499,311	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U8	USP5,499,312	U8 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
U9	USP5,504,657	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U10	USP5,506,921	U10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
U11	USP5,506,922	U11 through U14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
U12	USP5,507,668	
U13	USP5,526,235	
U14	USP5,527,991	
U15	USP5,534,662	This reference does not qualify as prior art.

U16	USP5,535,296	Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
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Ref	Title	Distinction between reference(s) and claim(s)
V1	USP5,535,364	V1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
V2	USP5,545,845	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V3	USP5,546,281	
V4	USP5,547,385	
V5	USP5,548,641	V5 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
V6	USP5,548,677	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V7	USP5,554,031	V7 through V9 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
V8	USP5,554,037	
V9	USP5,567,167	
V10	USP5,577,064	V10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
V11	USP5,580,269	V11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
V12	USP5,588,850	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

V13	USP5,598,319	V13 and V14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
V14	USP5,599,595	
V15	USP5,600,470	V15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
V16	USP5,613,860	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
W1	USP5,629,919	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
W2	USP5,631,998	
W3	USP5,653,596	
W4	USP5,659,459	W4 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
W5	USP5,675,428	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
W6	USP5,687,267	
W7	USP5,717,533	
W8	USP5,724,729	
W9	USP5,726,864	
W10	USP5,734,558	
W11	USP5,736,782	
W12	USP5,747,735	
W13	USP5,767,999	
W14	USP5,779,504	
W15	USP5,797,771	
W16	USP5,836,774	

Ref	Title	Distinction between reference(s) and claim(s)
X1	USP5,864,468	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
X2	USP5,879,173	

X3	DE.4239124 A1	X3 through X6 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
X4	EP 0 232792 A1	
X5	EP.0 228 278	
X6	EP.0 305112 A2	
X7	EP.0 314 651 A2	X7 and X8 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
X8	EP.0 413 489 A2	
X9	EP.0 437 161 A2	X9 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
X10	EP.0 456 298 B1	X10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
X11	EP.0 530 791 A2	X11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
X12	EP.0 535 473 A1	X12 through X14 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
X13	EP.0 588 014 A2	
X14	EP.0 600 645 A1	
X15	EP.0 613 032 A2	X15 does not disclose, at least, an optical module comprising a single circuit board mounting thereon a serial connector, a laser diode electrical signal converter and an integrated circuit electrically coupled to a photo diode to produce serial data.
X16	EP.0 652 696 A1	X16 through X18 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
X17	EP.0 656 696 A1	
X18	EP.0 662 259 B1	
X19	EP.442 608 A2	X19 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

X20	WO 94/12900	X20 and X21 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
X21	JP.1-237783	

Ref	Title	Distinction between reference(s) and claim(s)
Y1	JP.2-151084	Y1 through Y4 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
Y2	JP.2-181710	
Y3	JP.2-278212	
Y4	JP.2-87837	
Y5	JP.3-20458	Y5 through Y7 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
Y6	JP.3-94869	
Y7	JP.4-109593	
Y8	JP.4-122905	Y8 through Y10 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
Y9	JP.4-165312	
Y10	JP.4-211208	
Y11	JP.4-221207	Y11 through Y13 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
Y12	JP.4-229962	
Y13	JP.4-230978	
Y14	JP.4-234715	Y14 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
Y15	JP.4-270305	Y15 through Y18 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
Y16	JP.4-50901	
Y17	JP.4-87809	
Y18	JP.5-052802	
Y19	JP.5-134147	Y19 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
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Z1	JP.5-152607	Z1 and Z2 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
Z2	JP.5-188250	
Z3	JP.5-211379	Z3 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
Z4	JP.5-218581	Z4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
Z5	JP.5-290913	Z5 through Z8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
Z6	JP.5-70955	
Z7	JP.61-158046	
Z8	JP.61-188385	
Z9	JP.63-009325	Z9 does not disclose, at least, an optical module comprising a single circuit board mounting thereon a serial connector, a laser diode electrical signal converter and an integrated circuit electrically coupled to a photo diode to produce serial data.
Z10	JP.63-16496	Z10 through Z19 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
Z11	JP.63-65967	
Z12	JP.63-65978	
Z13	JP.63-82998	
Z14	U-3-20458	
Z15	U-3-94869	
Z16	U-4-87809	
Z17	U-5-052802	
Z18	U-5-70955	
Z19	U-61-158046	

Ref	Title	Distinction between reference(s) and claim(s)
AA1	U-61-188385	AA1 through AA5 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
AA2	U-63-16496	
AA3	U-63-65967	
AA4	U-63-65978	
AA5	U-63-82998	

Ref	Title	Distinction between reference(s) and claim(s)
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BB1	AT&T Microelectronics, "1408-Type ODL Transceiver" Feb. 1994 preliminary data sheet.p.2-10	BB1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
BB2	Ronald LSoderstrom et al., "An optical Data Link using a CD laser", SPIE Vol.1577 High Speed Fiber Networks and Channels, pp.163-173, 1991	BB2 through BB4 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
BB3	BCP, Inc. "Gigabits Over Multimode Optical Fiber" no date	
BB4	Ronald L.Soderstrom et al., "CD laser optical Data Links for Workstation and Midrange Computers", IEEE p.505-509, 1993.	
BB5	FDDI Low-Cost Fiber Physical Layer Medium Dependent (LCF-PMD) Common Receiver Footprint, no date.	BB5 does not disclose, at least, an optical module comprising a single circuit board mounting thereon a serial connector, a laser diode electrical signal converter and an integrated circuit electrically coupled to a photo diode to produce serial data.
BB6	HP Module HFBR-5103, FDDI Data Sheet, <a href="http://www.hp.com/HP-COMP/fiber/hfbr5103.html">http://www.hp.com/HP-COMP/fiber/hfbr5103.html</a> , Jun. 11, 1998	BB6 and BB7 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
BB7	IBM Technical Disclosure Bulletin "Optical Link Card Guide/Retention System", <a href="http://www.patents.ibm.com/tdbs/tdb?&amp;order=93A+60964">www.patents.ibm.com/tdbs/tdb?&amp;order=93A+60964</a> , April 1993	
BB8	IBM, "A Proposal for a New High Performance... "Optoelectronics Enterprise Oct.1992 ANSI Meeting, Oct.13, 1992	BB8 and BB9 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
BB9	IBM, et al, "GLM Family", FCSI-301-Ren Sun, GLM, ,,,,,, FCSI-301-Rev1.0, Feb. 16, 1994.	
BB10	Methode Electronics, Inc., "DM 1063-DBLM9 Copper Gigabit Link Module" data sheet.(no date)	BB10 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
BB11	"Raylan Joins Low-Wavelength Push -850 nm Transceiver", Electronic Engineering Times, Aug.1993.	BB11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
CC1	Sumitomo Electric Fiber Optics Corp. "Transceiver Manufacturers to Support Common Footprint for Desktop FDDI Applications, " June 23, 1992.	CC1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.



CC2	Sun Microsystems computer Co. et al., Gigabit Interface Converter (GBIC), Rev 4.4, Dec. 1, 1997	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
CC3	Siemens, "Who provides Low-Cost Transceivers for all Standards?" no date.	CC3 through CC5 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
CC4	AMP "PC Board Connectors", Product Guide 82759, pp. 7104-7108, Catalog E2750 issued Jun. 1991	
CC5	AMP Inc. "Lytel Molded-Optronic SC Duplex Transceiver" Catalog 65922, Dec. 1993.	
CC6	AMPHENOL Engineering News vol. 7 No. 6., pp241, 264-65, Nov. 1994	CC6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
CC7	Baldwin and Kellerman, "Fiber Optic Module Interface Attachment" Research disclosure, Kenneth Mason Publications Ltd., England, Apr. 1991.	CC7 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
CC8	Block and Gaio "Optical Link Card guide/Retention Sys" RESEARCH DISCLOSURE Kenneth Mason Publications Ltd., England, Apr. 1993.	CC8 and CC9 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
CC9	Cinch Hinge Connectors Catalog CM-16, Jul. 1963.	
CC10	Martin H. Weik, "Communication Standard Dictionary" p.454. definition of LED, Van Nostrand Reinhold Co.	CC10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
CC11	Edward R. Salmon, Encapsulation of Electronic Devices and Components, Marcel Dekker Inc., New York, 1987	CC11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
DD1	Dieter Gwinner, Conductive Coatings: Vacuum Evaporated Aluminum for Selective Shielding of Plastic Housings, no date.	DD1 through DD3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
DD2	HEADS Up--Sumitomo Electric Lightwave joins Other in Announcement, May 11, 1995	
DD3	Robert C. Herron, High Density Input/Output Connector Systems, 3M Electronic Products Divisions, 1990	
DD4	Shortwave Opto Assembly, IBM OptoElectronic Enterprises; IBM/OEE Market Survey Only, Rev. 1, Jan. 6, 1993	DD4 and DD5 do not disclose, at least, an optical module comprising a laser diode electrical signal

DD5	"Minimizing Electrostatic Discharge Damage to a Cartridge", IBM Technical Disclosure Bulletin, vol. 29 No. 10. Mar., 1987	converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
DD6	Japanese Standards Association " F04 Type Connectors for Optical Fiber Cords JIS C 5973" Japanese Standards Association, 1990.	DD6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
DD7	Ronald LSoderstrom et al., A Miniaturized Fiber Optic Laser Receptacle Using a Compact Disk(CD)··· FOC/LAN' 87&MFOC-WEST, pp.383-385, no date.	DD7 through DD9 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
DD8	"Transceiver Module Assembly", IBM Technical Disclosure Bulletin, Oct. 1979, <a href="https://www.delphion.com/tbds/tdb?o=79A+06370">https://www.delphion.com/tbds/tdb?o=79A+06370</a> , last visited Mar.3, 2005.	
DD9	Ronald L.Soderstrom et al., Optical Components and Electronic Packaging for High Performance Optical Data Links, THE RESEARCH INVESTMENT, p.19-28(no date).	
DD10	Thomas & Betts INFO-LAN Modem 1998	DD10 does not disclose, at least, an optical module comprising a single circuit board mounting thereon a serial connector, a laser diode electrical signal converter and an integrated circuit electrically coupled to a photo diode to produce serial data.
DD11	"Active component manufacturers lower the cost of fiber to the desktop", Lightwave, Feb. 1994 pp.58,67.	DD11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
EE1	Fibre Distributed Date Interface(FDDI)-Token Ring Low-Cost Fibre Physical Layer Medium Dependent (LCF-PMD), American National Standards Institute, 1996.	EE1 through EE11 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
EE2	Communications Standard Dictionary; p.454, definition of inhomogeneous fiber, Van Nostrand Reinhold Publishing, 1983	
EE3	"Transmitter/receiver assembly simplifies use of fibre optics", Design Engineering, p.19, Button Press, Ltd., April 1980.	
EE4	Ronald L.Soderstrom et al., "CD laser as a fiber optic source for computer data links", Fiber Optic Datacom and Computer Networks, SPIE-The International Society for Optical Engineerings, Vol.1577, pp.174-181, 1988	
EE5	David A.Knodel et al., "Open Fibre Control, a laser safety interlock technique", High-Speed Fiber Networks and Channels, SPIE-The International Society for Optical Engineering Proceedings, Vol.991, pp.179-182, 1992	

EE6	"IBM Technical Disclosure Bulletin, Electrostatic Dissipative Enclosed Connector", Vol.34, No.7B, Dec.1991	
EE7	"High Reliability SW Laser For Optical Data Links", LEOS '93 Conference Proceedings, IEEE Lasers and Electro-Optics Society 1993 Annual Meeting;	
EE8	Minimizing Electrostatic Discharge to a Cartridge, IBM Technical Disclosure Bulletin, March 1987, <a href="https://www.delphion.com/tdb?o=87A%2060509">https://www.delphion.com/tdb?o=87A%2060509</a> , last visited Mar.8,2005.	
EE9	K.P.Jackson et al., "High-Density, Array, Optical Interconnects for Multi-Chip Module Conference MCMC-92 Proceedings, IEEE Computer Society Press.	
EE10	TDB:Stackable Circuit Card Packaging within a Logic Cage, IBM Technical Disclosure Bulletin, Dec.1992, <a href="https://www.delphion.com/tbds/tdb?o=92A%2063485">https://www.delphion.com/tbds/tdb?o=92A%2063485</a> , last visited Mar.8,2005	
EE11	Jeff Hechi, The Laser Guidebook, 2nd ed., McGraw Hill, Inc., 1992	

Claim Chart for Claim 171 of 10/766,488

Ref	Title	Distinction between reference(s) and claim(s)
A1	Re.32,502	A1 through A12 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
A2	USP2,899,669	
A3	USP3,264,601	
A4	USP3,332,860	
A5	USP3,474,380	
A6	USP3,497,866	
A7	USP3,523,269	
A8	USP3,670,290	
A9	USP3,673,545	
A10	USP3,706,869	
A11	USP3,737,729	
A12	USP3,790,923	
A13	USP3,792,284	A13 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
A14	USP3,805,116	A14 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
A15	USP3,809,908	A15 and A16 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
A16	USP3,976,877	

Ref	Title	Distinction between reference(s) and claim(s)
B1	USP3,990,761	B1 through B3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
B2	USP4,047,242	
B3	USP4,156,903	
B4	USP4,161,650	B4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
B5	USP4,167,303	B5 through B7 do not disclose, at least, an optical module comprising a laser diode module to convert
B6	USP4,176,897	

B7	USP4,217,019	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
B8	USP4,217,488	B8 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
B9	USP4,226,491	B9 and B10 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
B10	USP4,234,968	
B11	USP4,249,266	B11 through B13 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
B12	USP4,252,402	
B13	USP4,257,124	
B14	USP4,268,756	B14 and B15 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
B15	USP4,273,413	
B16	USP4,276,656	B16 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
C1	USP4,294,682	C1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
C2	USP4,295,181	C2 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
C3	USP4,301,543	C3 and C4 do not disclose, at least, an optical

C4	USP4,330,870	module comprising a single circuit board mounting thereon a serial connector, a laser diode electrical signal converter and a second converter to convert a voltage signal to serial data.
C5	USP4,345,808	C5 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
C6	USP4,347,655	C6 does not disclose, at least, an optical module comprising a single circuit board mounting thereon a serial connector, a laser diode electrical signal converter and a second converter to convert a voltage signal to serial data.
C7	USP4,357,606	C7 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
C8	USP4,360,248	C8 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
C9	USP4,366,565	C9 does not disclose, at least, an optical module comprising a single circuit board mounting thereon a serial connector, a laser diode electrical signal converter and a second converter to convert a voltage signal to serial data.
C10	USP4,369,494	C10 through C15 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
C11	USP4,380,360	
C12	USP4,388,671	
C13	USP4,393,516	
C14	USP4,398,073	
C15	USP4,398,780	
C16	USP4,399,563	C16 does not disclose, at least, an optical module comprising a single circuit board mounting thereon a serial connector, a laser diode electrical signal converter and a second converter to convert a voltage signal to serial data.

Ref	Title	Distinction between reference(s) and claim(s)
D1	USP4,408,273	D1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser

		diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
D2	USP4,422,088	D2 through D4 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
D3	USP4,427,879	
D4	USP4,430,699	
D5	USP4,434,537	D5 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
D6	USP4,437,190	D6 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
D7	USP4,439,006	D7 does not disclose, at least, an optical module comprising a single circuit board mounting thereon a serial connector, a laser diode electrical signal converter and a second converter to convert a voltage signal to serial data.
D8	USP4,446,515	D8 and D9 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
D9	USP4,449,244	
D10	USP4,449,784	D10 through D13 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
D11	USP4,453,903	
D12	USP4,459,658	
D13	USP4,461,537	
D14	USP4,470,154	D14 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
D15	USP4,486,059	D15 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
D16	USP4,493,113	D16 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard,

		into a laser diode electrical signal.
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Ref	Title	Distinction between reference(s) and claim(s)
E1	USP4,501,021	E1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
E2	USP4,502,130	E2 through E5 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
E3	USP4,505,035	
E4	USP4,506,937	
E5	USP4,510,553	
E6	USP4,511,207	E6 does not disclose, at least, an optical module comprising a single circuit board mounting thereon a serial connector, a laser diode electrical signal converter and a second converter to convert a voltage signal to serial data.
E7	USP4,514,586	E7 through E14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
E8	USP4,516,204	
E9	USP4,519,670	
E10	USP4,519,672	
E11	USP4,519,673	
E12	USP4,522,463	
E13	USP4,526,438	
E14	USP4,526,986	
E15	USP4,527,286	E15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
E16	USP4,529,266	E16 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
F1	USP4,530,566	F1 through F3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
F2	USP4,531,810	
F3	USP4,533,208	



F4	USP4,533,209	F4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
F5	USP4,534,616	F5 through F8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
F6	USP4,534,617	
F7	USP4,535,233	
F8	USP4,537,468	
F9	USP4,539,476	F9 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
F10	USP4,540,237	F10 through F16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
F11	USP4,540,246	
F12	USP4,541,036	
F13	USP4,541,685	
F14	USP4,542,076	
F15	USP4,544,231	
F16	USP4,544,233	

Ref	Title	Distinction between reference(s) and claim(s)
G1	USP4,544,234	G1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
G2	USP4,545,074	G2 and G3 do not disclose, at least, an optical module comprising a single circuit board mounting thereon a serial connector, a laser diode electrical signal converter and a second converter to convert a voltage signal to serial data.
G3	USP4,545,077	
G4	USP4,545,642	G4 through G8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
G5	USP4,545,643	
G6	USP4,545,644	
G7	USP4,545,645	
G8	USP4,548,465	
G9	USP4,548,466	G9 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
G10	USP4,548,467	G10 does not disclose, at least, an optical module

		comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
G11	USP4,549,782	G11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
G12	USP4,549,783	G12 through G14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
G13	USP4,550,975	
G14	USP4,553,811	
G15	USP4,553,813	G15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
G16	USP4,553,814	G16 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
H1	USP4,556,279	H1 through H10 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
H2	USP4,556,281	
H3	USP4,556,282	
H4	USP4,557,551	
H5	USP4,560,234	
H6	USP4,563,057	
H7	USP4,566,753	
H8	USP4,568,145	
H9	USP4,569,569	
H10	USP4,573,760	
H11	USP4,580,295	H11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
H12	USP4,580,872	H12 through H16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser
H13	USP4,588,256	
H14	USP4,589,728	

H15	USP4,597,631	diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
H16	USP4,614,836	

Ref	Title	Distinction between reference(s) and claim(s)
I1	USP4,629,270	I1 and I2 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
I2	USP4,634,239	
I3	USP4,641,371	I3 does not disclose, at least, an optical module comprising a single circuit board mounting thereon a serial connector, a laser diode electrical signal converter and a second converter to convert a voltage signal to serial data.
I4	USP4,647,148	I4 through I16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
I5	USP4,652,976	
I6	USP4,663,240	
I7	USP4,663,603	
I8	USP4,678,264	
I9	USP4,679,883	
I10	USP4,695,106	
I11	USP4,697,864	
I12	USP4,708,433	
I13	USP4,715,675	
I14	USP4,720,630	
I15	USP4,722,584	
I16	USP4,736,100	

Ref	Title	Distinction between reference(s) and claim(s)
J1	USP4,756,593	J1 through J15 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
J2	USP4,762,388	
J3	USP4,767,179	
J4	USP4,772,931	
J5	USP4,779,952	
J6	USP4,789,218	
J7	USP4,798,430	
J8	USP4,798,440	
J9	USP4,807,006	
J10	USP4,807,955	
J11	USP4,808,115	
J12	USP4,811,165	

J13	USP4,812,133	
J14	USP4,821,145	
J15	USP4,823,235	
J16	USP4,838,630	J16 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
K1	USP4,840,451	K1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
K2	USP4,844,581	K2 does not disclose, at least, an optical module comprising a single circuit board mounting thereon a serial connector, a laser diode electrical signal converter and a second converter to convert a voltage signal to serial data.
K3	USP4,847,711	K3 through K9 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
K4	USP4,847,771	
K5	USP4,849,944	
K6	USP4,857,002	
K7	USP4,862,327	
K8	USP4,872,212	
K9	USP4,872,736	
K10	USP4,881,789	K10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
K11	USP4,884,336	K11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
K12	USP4,897,711	K12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
K13	USP4,906,197	K13 through K16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
K14	USP4,927,225	
K15	USP4,944,568	
K16	USP4,945,448	

Ref	Title	Distinction between reference(s) and claim(s)
L1	USP4,953,929	L1 through L4 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
L2	USP4,955,817	
L3	USP4,963,104	
L4	USP4,967,312	
L5	USP4,977,329	L5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
L6	USP4,979,793	L6 and L7 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
L7	USP4,979,794	
L8	USP4,986,625	L8 and L9 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
L9	USP4,989,934	
L10	USP4,990,104	L10 through L16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
L11	USP4,991,062	
L12	USP5,002,495	
L13	USP5,004,434	
L14	USP5,006,286	
L15	USP5,011,425	
L16	USP5,029,254	

Ref	Title	Distinction between reference(s) and claim(s)
M1	USP5,035,482	M1 through M4 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
M2	USP5,035,641	
M3	USP5,040,993	
M4	USP5,041,025	
M5	USP5,043,775	M5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
M6	USP5,044,982	M6 through M14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser
M7	USP5,045,635	
M8	USP5,045,971	

M9	USP5,046,955	diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
M10	USP5,060,373	
M11	USP5,071,219	
M12	USP5,076,656	
M13	USP5,076,688	
M14	USP5,082,344	
M15	USP5,084,802	M15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
M16	USP5,086,422	M16 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
N1	USP5,091,991	N1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
N2	USP5,093,879	N2 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
N3	USP5,094,623	N3 through N8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
N4	USP5,101,463	
N5	USP5,104,243	
N6	USP5,107,404	
N7	USP5,108,294	
N8	USP5,109,453	
N9	USP5,113,467	N9 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
N10	USP5,116,239	N10 through N14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
N11	USP5,117,476	
N12	USP5,118,362	
N13	USP5,118,904	
N14	USP5,120,578	
N15	USP5,122,893	N15 does not disclose, at least, an optical module

		comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
N16	USP5,124,885	N16 and N17 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
N17	USP5,125,849	
N18	USP5,127,071	N18 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
N19	USP5,132,871	N19 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
O1	USP5,134,677	O1 through O3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
O2	USP5,134,679	
O3	USP5,136,063	
O4	USP5,136,152	O4 and O5 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
O5	USP5,136,603	
O6	USP5,138,537	O6 through O8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
O7	USP5,138,678	
O8	USP5,140,663	
O9	USP5,155,786	O9 and O10 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
O10	USP5,157,769	
O11	USP5,167,139	O11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of

		1000 Mbits/s or more.
O12	USP5,168,537	O12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
O13	USP5,170,146	O13 through O17 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
O14	USP5,171,167	
O15	USP5,173,059	
O16	USP5,183,404	
O17	USP5,183,405	

Ref	Title	Distinction between reference(s) and claim(s)
P1	USP5,195,911	P1 through P4 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
P2	USP5,202,536	
P3	USP5,207,597	
P4	USP5,212,752	
P5	USP5,212,754	P5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
P6	USP5,218,519	P6 through P11 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
P7	USP5,225,760	
P8	USP5,233,676	
P9	USP5,233,674	
P10	USP5,234,353	
P11	USP5,238,426	
P12	USP5,241,614	P12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
P13	USP5,247,532	P13 does not disclose, at least, an optical module comprising a single circuit board mounting thereon a serial connector, a laser diode electrical signal converter and a second converter to convert a voltage signal to serial data.
P14	USP5,259,052	P14 through P16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
P15	USP5,259,054	
P16	USP5,262,923	
P17	USP5,271,079	P17 does not disclose, at least, an optical module



		comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
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Ref	Title	Distinction between reference(s) and claim(s)
Q1	USP5,274,729	Q1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
Q2	USP5,285,466	Q2 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
Q3	USP5,285,511	Q3 doesnot disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
Q4	USP5,285,512	Q4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
Q5	USP5,286,207	Q5 through Q16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
Q6	USP5,286,247	
Q7	USP5,288,247	
Q8	USP5,289,347	
Q9	USP5,296,813	
Q10	USP5,299,089	
Q11	USP5,304,069	
Q12	USP5,305,182	
Q13	USP5,311,408	
Q14	USP5,315,679	
Q15	USP5,317,663	
Q16	USP5,321,819	

Ref	Title	Distinction between reference(s) and claim(s)
R1	USP5,329,604	R1 through R3 do not disclose, at least, an optical module comprising a laser diode module to convert
R2	USP5,333,221	

R3	USP5,333,225	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
R4	USP5,337,391	R4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
R5	USP5,337,396	R5 and R6 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
R6	USP5,340,340	
R7	USP5,345,524	R7 and R8 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
R8	USP5,345,530	
R9	USP5,353,364	R9 does not disclose, at least, an optical module comprising a single circuit board mounting thereon a serial connector, a laser diode electrical signal converter and a second converter to convert a voltage signal to serial data.
R10	USP5,353,634	R10 through R12 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
R11	USP5,356,300	
R12	USP5,357,402	
R13	USP5,361,244	R13 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
R14	USP5,361,318	R14 through R16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
R15	USP5,366,664	
R16	USP5,372,515	

Ref	Title	Distinction between reference(s) and claim(s)
S1	USP5,375,040	S1 through S9 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical
S2	USP5,383,793	
S3	USP5,388,995	
S4	USP5,390,268	

S5	USP5,393,249	signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
S6	USP5,397,242	
S7	USP5,398,154	
S8	USP5,398,295	
S9	USP5,408,384	
S10	USP5,414,787	S10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
S11	USP5,416,668	S11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
S12	USP5,416,870	S12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
S13	USP5,416,872	S13 through S16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
S14	USP5,419,717	
S15	USP5,424,573	
S16	USP5,428,703	

Ref	Title	Distinction between reference(s) and claim(s)
T1	USP5,428,704	T1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
T2	USP5,434,747	T2 and T3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
T3	USP5,443,390	
T4	USP5,446,814	T4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
T5	USP5,452,387	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

T6	USP5,454,080	T6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
T7	USP5,455,703	T7 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
T8	USP5,463,532	T8 and T9 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
T9	USP5,469,332	
T10	USP5,470,257	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T11	USP5,470,259	
T12	USP5,475,734	T12 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
T13	USP5,477,418	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T14	USP5,478,253	
T15	USP5,478,259	T15 and T16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
T16	USP5,478,260	

Ref	Title	Distinction between reference(s) and claim(s)
U1	USP5,481,634	U1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
U2	USP5,482,658	U2 does not disclose, at least, an optical module

		comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
U3	USP5,487,678	U3 and U4 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
U4	USP5,491,613	
U5	USP5,491,712	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U6	USP5,494,747	U6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
U7	USP5,499,311	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U8	USP5,499,312	U8 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
U9	USP5,504,657	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U10	USP5,506,921	U10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
U11	USP5,506,922	U11 through U14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
U12	USP5,507,668	
U13	USP5,526,235	
U14	USP5,527,991	
U15	USP5,534,662	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U16	USP5,535,296	

Ref	Title	Distinction between reference(s) and claim(s)
V1	USP5,535,364	V1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
V2	USP5,545,845	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V3	USP5,546,281	
V4	USP5,547,385	
V5	USP5,548,641	V5 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
V6	USP5,548,677	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V7	USP5,554,031	V7 through V9 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
V8	USP5,554,037	
V9	USP5,567,167	
V10	USP5,577,064	V10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
V11	USP5,580,269	V11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
V12	USP5,588,850	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V13	USP5,598,319	V13 and V14 do not disclose, at least, an optical

V14	USP5,599,595	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
V15	USP5,600,470	V15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
V16	USP5,613,860	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
W1	USP5,629,919	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
W2	USP5,631,998	
W3	USP5,653,596	
W4	USP5,659,459	W4 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
W5	USP5,675,428	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
W6	USP5,687,267	
W7	USP5,717,533	
W8	USP5,724,729	
W9	USP5,726,864	
W10	USP5,734,558	
W11	USP5,736,782	
W12	USP5,747,735	
W13	USP5,767,999	
W14	USP5,779,504	
W15	USP5,797,771	
W16	USP5,836,774	

Ref	Title	Distinction between reference(s) and claim(s)
X1	USP5,864,468	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
X2	USP5,879,173	
X3	DE.4239124 A1	X3 through X6 do not disclose, at least, an optical

X4	EP 0 232792 A1	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
X5	EP.0 228 278	
X6	EP.0 305112 A2	
X7	EP.0 314 651 A2	X7 and X8 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
X8	EP.0 413 489 A2	
X9	EP.0 437 161 A2	X9 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
X10	EP.0 456 298 B1	X10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
X11	EP.0 530 791 A2	X11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
X12	EP.0 535 473 A1	X12 through X14 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
X13	EP.0 588 014 A2	
X14	EP.0 600 645 A1	
X15	EP.0 613 032 A2	X15 does not disclose, at least, an optical module comprising a single circuit board mounting thereon a serial connector, a laser diode electrical signal converter and a second converter to convert a voltage signal to serial data.
X16	EP.0 652 696 A1	X16 through X18 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
X17	EP.0 656 696 A1	
X18	EP.0 662 259 B1	
X19	EP.442 608 A2	X19 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
X20	WO 94/12900	X20 and X21 do not disclose, at least, an optical



X21	JP.1-237783	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
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Ref	Title	Distinction between reference(s) and claim(s)
Y1	JP.2-151084	Y1 through Y4 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
Y2	JP.2-181710	
Y3	JP.2-278212	
Y4	JP.2-87837	
Y5	JP.3-20458	Y5 through Y7 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
Y6	JP.3-94869	
Y7	JP.4-109593	
Y8	JP.4-122905	Y8 through Y10 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
Y9	JP.4-165312	
Y10	JP.4-211208	
Y11	JP.4-221207	Y11 through Y13 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
Y12	JP.4-229962	
Y13	JP.4-230978	
Y14	JP.4-234715	Y14 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
Y15	JP.4-270305	Y15 through Y18 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
Y16	JP.4-50901	
Y17	JP.4-87809	
Y18	JP.5-052802	
Y19	JP.5-134147	Y19 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
Z1	JP.5-152607	Z1 and Z2 do not disclose, at least, an optical

Z2	JP.5-188250	module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
Z3	JP.5-211379	Z3 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
Z4	JP.5-218581	Z4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
Z5	JP.5-290913	Z5 through Z8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
Z6	JP.5-70955	
Z7	JP.61-158046	
Z8	JP.61-188385	
Z9	JP.63-009325	Z9 does not disclose, at least, an optical module comprising a single circuit board mounting thereon a serial connector, a laser diode electrical signal converter and a second converter to convert a voltage signal to serial data.
Z10	JP.63-16496	Z10 through Z19 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
Z11	JP.63-65967	
Z12	JP.63-65978	
Z13	JP.63-82998	
Z14	U-3-20458	
Z15	U-3-94869	
Z16	U-4-87809	
Z17	U-5-052802	
Z18	U-5-70955	
Z19	U-61-158046	

Ref	Title	Distinction between reference(s) and claim(s)
AA1	U-61-188385	AA1 through AA5 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
AA2	U-63-16496	
AA3	U-63-65967	
AA4	U-63-65978	
AA5	U-63-82998	

Ref	Title	Distinction between reference(s) and claim(s)
BB1	AT&T Microelectronics, "1408-Type ODL Transceiver"Feb. 1994 preliminary data sheet.p.2-10	BB1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
BB2	Ronald LSoderstrom et al., "An optical Data Link using a CD laser", SPIE Vol.1577 High Speed Fiber Networks and Channels,pp.163-173,1991	BB2 through BB4 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
BB3	BCP, Inc. "Gigabits Over Multimode Optical Fiber"no date	
BB4	Ronald L.Soderstrom et al., "CD laser optical Data Links for Workstation and Midrange Computers", IEEE p.505-509, 1993.	
BB5	FDDI Low-Cost Fiber Physical Layer Medium Dependent (LCF-PMD) Common Receiver Footprint, no date.	BB5 does not disclose, at least, an optical module comprising a single circuit board mounting thereon a serial connector, a laser diode electrical signal converter and a second converter to convert a voltage signal to serial data.
BB6	HP Module HFBR-5103, FDDI Data Sheet, <a href="http://www.hp.com/HP-COMP/fiber/hfbr5103.html">http://www.hp.com/HP-COMP/fiber/hfbr5103.html</a> , Jun. 11, 1998	BB6 and BB7 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
BB7	IBM Technical Disclosure Bulletin "Optical Link Card Guide/Retention System", <a href="http://www.patents.ibm.com/tbbs/tdb?&amp;order=93A+60964">www.patents.ibm.com/tbbs/tdb?&amp;order=93A+60964</a> , April 1993	
BB8	IBM, "A Proposal for a New High Performance... "OptopElectronics Enterprise Oct.1992 ANSI Meeting, Oct.13, 1992	BB8 and BB9 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
BB9	IBM, et al, "GLM Family", FCSI-301-Ren Sun, GLM, ,,,,,, FCSI-301-Rev1.0, Feb. 16, 1994.	
BB10	Methode Electronics, Inc., "DM 1063-DBLM9 Copper Gigabit Link Module" data sheet.(no date)	BB10 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
BB11	"Raylan Joins Low-Wavelength Push -850 nm Transceiver", Electronic Engineering Times, Aug. 1993.	BB11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
CC1	Sumitomo Electric Fiber Optics Corp. "Transceiver Manufacturers to Support Common Footprint for Desktop FDDI Applications, " June 23, 1992.	CC1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of

		1000 Mbits/s or more.
CC2	Sun Microsystems computer Co. et al., Gigabit Interface Converter (GBIC), Rev 4.4, Dec. 1, 1997	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
CC3	Siemens, "Who provides Low-Cost Transceivers for all Standards?" no date.	CC3 through CC5 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
CC4	AMP "PC Board Connectors", Product Guide 82759, pp. 7104-7108, Catalog E2750 issued Jun. 1991	
CC5	AMP Inc. "Lytel Molded-Optronic SC Duplex Transceiver" Catalog 65922, Dec. 1993.	
CC6	AMPHENOL Engineering News vol. 7 No. 6., pp241, 264-65, Nov. 1994	CC6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
CC7	Baldwin and Kellerman, "Fiber Optic Module Interface Attachment" Research disclosure, Kenneth Mason Publications Ltd., England, Apr. 1991.	CC7 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
CC8	Block and Gaio "Optical Link Card guide/Retention Sys" RESEARCH DISCLOSURE Kenneth Mason Publications Ltd., England, Apr. 1993.	CC8 and CC9 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
CC9	Cinch Hinge Connectors Catalog CM-16, Jul. 1963.	
CC10	Martin H. Weik, "Communication Standard Dictionary" p.454. definition of LED, Van Nostrand Reinhold Co.	CC10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
CC11	Edward R. Salmon, Encapsulation of Electronic Devices and Components, Marcel Dekker Inc., New York, 1987	CC11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
DD1	Dieter Gwinner, Conductive Coatings: Vacuum Evaporated Aluminum for Selective Shielding of Plastic Housings, no date.	DD1 through DD3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
DD2	HEADS Up--Sumitomo Electric Lightwave joins Other in Announcement, May 11, 1995	
DD3	Robert C. Herron, High Density Input/Output Connector Systems, 3M Electronic Products Divisions, 1990	

DD4	Shortwave Opto Assembly, IBM OptoElectronic Enterprises; IBM/OEE Market Survey Only, Rev. 1, Jan. 6, 1993	DD4 and DD5 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
DD5	"Minimizing Electrostatic Discharge Damage to a Cartridge", IBM Technical Disclosure Bulletin, vol. 29 No. 10. Mar., 1987	
DD6	Japanese Standards Association " F04 Type Connectors for Optical Fiber Cords JIS C 5973" Japanese Standards Association, 1990.	DD6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
DD7	Ronald L Soderstrom et al., A Miniaturized Fiber Optic Laser Receptacle Using a Compact Disk (CD) ... FOC/LAN '87 & MFOC-WEST, pp. 383-385, no date.	DD7 through DD9 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
DD8	"Transceiver Module Assembly", IBM Technical Disclosure Bulletin, Oct. 1979, <a href="https://www.delphion.com/tbds/tbd?o=79A+06370">https://www.delphion.com/tbds/tbd?o=79A+06370</a> , last visited Mar. 3, 2005.	
DD9	Ronald L. Soderstrom et al., Optical Components and Electronic Packaging for High Performance Optical Data Links, THE RESEARCH INVESTMENT, p. 19-28 (no date).	
DD10	Thomas & Betts INFO-LAN Modem 1998	DD10 does not disclose, at least, an optical module comprising a single circuit board mounting thereon a serial connector, a laser diode electrical signal converter and a second converter to convert a voltage signal to serial data.
DD11	"Active component manufacturers lower the cost of fiber to the desktop", Lightwave, Feb. 1994 pp. 58, 67.	DD11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.

Ref	Title	Distinction between reference(s) and claim(s)
EE1	Fibre Distributed Data Interface (FDDI)-Token Ring Low-Cost Fibre Physical Layer Medium Dependent (LCF-PMD), American National Standards Institute, 1996.	EE1 through EE11 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal, which is transmitted at a data transmission rate of 1000 Mbits/s or more.
EE2	Communications Standard Dictionary; p. 454, definition of inhomogeneous fiber, Van Nostrand Reinhold Publishing, 1983	
EE3	"Transmitter/receiver assembly simplifies use of fibre optics", Design Engineering, p. 19, Button Press, Ltd., April 1980.	
EE4	Ronald L. Soderstrom et al., "CD laser as a fiber optic source for computer data links", Fiber Optic Datacom and Computer Networks, SPIE-The International Society for Optical Engineering, Vol. 1577, pp. 174-181, 1988	

EE5	David A.Knodel et al., "Open Fibre Control,a laser safety interlock technique",High-Speed Fiber Networks and Channels,SPIE-The International Society for Optical Engineering Proceedings,Vol.991,pp.179-182,1992	
EE6	"IBM Technical Disclosure Bulletin, Electrostatic Dissipative Enclosed Connector", Vol.34, No.7B, Dec. 1991	
EE7	"High Reliability SW Laser For Optical Data Links", LEOS '93 Conference Proceedings, IEEE Lasers and Electro-Optics Society 1993 Annual Meeting;	
EE8	Minimizing Electrostatic Discharge to a Cartridge,IBM Technical Disclosure Bulletin,March 1987, <a href="https://www.delphion.com/tdb?o=87A%2060509">https://www.delphion.com/tdb?o=87A%2060509</a> ,last visited Mar.8,2005.	
EE9	K.P.Jackson et al., "High-Density, Array, Optical Interconnects for Multi-Chip Module Conference MCMC-92 Proceedings,IEEE Computer Society Press.	
EE10	TDB:Stackable Circuit Card Packaging within a Logic Cage,IBM Technical Disclosure Bulletin,Dec.1992, <a href="https://www.delphion.com/tbds/tdb?o=92A%2063485">https://www.delphion.com/tbds/tdb?o=92A%2063485</a> ,last visited Mar.8,2005	
EE11	Jeff Hechi, The Laser Guidebook,2nd ed.,McGraw Hill,Inc.,1992	

Claim Chart for Claims 172-175 of 10/766,488

Ref	Title	Distinction between reference(s) and claim(s)
A1	Re.32,502	A1 through A12 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
A2	USP2,899,669	
A3	USP3,264,601	
A4	USP3,332,860	
A5	USP3,474,380	
A6	USP3,497,866	
A7	USP3,523,269	
A8	USP3,670,290	
A9	USP3,673,545	
A10	USP3,706,869	
A11	USP3,737,729	
A12	USP3,790,923	
A13	USP3,792,284	A13 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
A14	USP3,805,116	A14 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
A15	USP3,809,908	A15 and A16 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
A16	USP3,976,877	

Ref	Title	Distinction between reference(s) and claim(s)
B1	USP3,990,761	B1 through B3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
B2	USP4,047,242	
B3	USP4,156,903	
B4	USP4,161,650	B4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
B5	USP4,167,303	B5 through B7 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
B6	USP4,176,897	
B7	USP4,217,019	
B8	USP4,217,488	B8 does not disclose, at least, an optical module comprising a laser diode electrical signal converter

		to convert serial data, received from a motherboard, into a laser diode electrical signal.
B9	USP4,226,491	B9 and B10 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
B10	USP4,234,968	
B11	USP4,249,266	B11 through B13 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
B12	USP4,252,402	
B13	USP4,257,124	
B14	USP4,268,756	B14 and B15 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
B15	USP4,273,413	
B16	USP4,276,656	B16 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
C1	USP4,294,682	C1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
C2	USP4,295,181	C2 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
C3	USP4,301,543	C3 and C4 do not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.
C4	USP4,330,870	
C5	USP4,345,808	C5 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
C6	USP4,347,655	C6 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal



		converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.
C7	USP4,357,606	C7 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
C8	USP4,360,248	C8 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
C9	USP4,366,565	C9 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.
C10	USP4,369,494	C10 through C15 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
C11	USP4,380,360	
C12	USP4,388,671	
C13	USP4,393,516	
C14	USP4,398,073	
C15	USP4,398,780	
C16	USP4,399,563	C16 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.

Ref	Title	Distinction between reference(s) and claim(s)
D1	USP4,408,273	D1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
D2	USP4,422,088	D2 through D4 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
D3	USP4,427,879	
D4	USP4,430,699	
D5	USP4,434,537	D5 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical

		signal and transmit the laser diode optical signal.
D6	USP4,437,190	D6 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
D7	USP4,439,006	D7 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.
D8	USP4,446,515	D8 and D9 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
D9	USP4,449,244	
D10	USP4,449,784	D10 through D13 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
D11	USP4,453,903	
D12	USP4,459,658	
D13	USP4,461,537	
D14	USP4,470,154	D14 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
D15	USP4,486,059	D15 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
D16	USP4,493,113	D16 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
E1	USP4,501,021	E1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
E2	USP4,502,130	E2 through E5 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
E3	USP4,505,035	
E4	USP4,506,937	
E5	USP4,510,553	
E6	USP4,511,207	E6 does not disclose, at least, an optical module

		comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.
E7	USP4,514,586	E7 through E14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
E8	USP4,516,204	
E9	USP4,519,670	
E10	USP4,519,672	
E11	USP4,519,673	
E12	USP4,522,463	
E13	USP4,526,438	
E14	USP4,526,986	
E15	USP4,527,286	E15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
E16	USP4,529,266	E16 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
F1	USP4,530,566	F1 through F3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
F2	USP4,531,810	
F3	USP4,533,208	
F4	USP4,533,209	F4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
F5	USP4,534,616	F5 through F8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
F6	USP4,534,617	
F7	USP4,535,233	
F8	USP4,537,468	
F9	USP4,539,476	F9 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
F10	USP4,540,237	F10 through F16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode
F11	USP4,540,246	
F12	USP4,541,036	

F13	USP4,541,685	optical signal and transmit the laser diode optical signal.
F14	USP4,542,076	
F15	USP4,544,231	
F16	USP4,544,233	

Ref	Title	Distinction between reference(s) and claim(s)
G1	USP4,544,234	G1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
G2	USP4,545,074	G2 and G3 do not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.
G3	USP4,545,077	
G4	USP4,545,642	G4 through G8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
G5	USP4,545,643	
G6	USP4,545,644	
G7	USP4,545,645	
G8	USP4,548,465	
G9	USP4,548,466	G9 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
G10	USP4,548,467	G10 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
G11	USP4,549,782	G11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
G12	USP4,549,783	G12 through G14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
G13	USP4,550,975	
G14	USP4,553,811	
G15	USP4,553,813	G15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
G16	USP4,553,814	G16 does not disclose, at least, an optical module comprising a laser diode module to convert a laser

		diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
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Ref	Title	Distinction between reference(s) and claim(s)
H1	USP4,556,279	H1 through H10 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
H2	USP4,556,281	
H3	USP4,556,282	
H4	USP4,557,551	
H5	USP4,560,234	
H6	USP4,563,057	
H7	USP4,566,753	
H8	USP4,568,145	
H9	USP4,569,569	
H10	USP4,573,760	
H11	USP4,580,295	H11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
H12	USP4,580,872	H12 through H16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
H13	USP4,588,256	
H14	USP4,589,728	
H15	USP4,597,631	
H16	USP4,614,836	

Ref	Title	Distinction between reference(s) and claim(s)
I1	USP4,629,270	I1 and I2 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
I2	USP4,634,239	
I3	USP4,641,371	I3 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.
I4	USP4,647,148	I4 through I16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
I5	USP4,652,976	
I6	USP4,663,240	
I7	USP4,663,603	
I8	USP4,678,264	
I9	USP4,679,883	
I10	USP4,695,106	

I11	USP4,697,864	
I12	USP4,708,433	
I13	USP4,715,675	
I14	USP4,720,630	
I15	USP4,722,584	
I16	USP4,736,100	

Ref	Title	Distinction between reference(s) and claim(s)
J1	USP4,756,593	J1 through J15 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
J2	USP4,762,388	
J3	USP4,767,179	
J4	USP4,772,931	
J5	USP4,779,952	
J6	USP4,789,218	
J7	USP4,798,430	
J8	USP4,798,440	
J9	USP4,807,006	
J10	USP4,807,955	
J11	USP4,808,115	
J12	USP4,811,165	
J13	USP4,812,133	
J14	USP4,821,145	
J15	USP4,823,235	
J16	USP4,838,630	J16 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
K1	USP4,840,451	K1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
K2	USP4,844,581	K2 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.
K3	USP4,847,711	K3 through K9 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode
K4	USP4,847,771	
K5	USP4,849,944	

K6	USP4,857,002	optical signal and transmit the laser diode optical signal.
K7	USP4,862,327	
K8	USP4,872,212	
K9	USP4,872,736	
K10	USP4,881,789	K10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
K11	USP4,884,336	K11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
K12	USP4,897,711	K12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
K13	USP4,906,197	K13 through K16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
K14	USP4,927,225	
K15	USP4,944,568	
K16	USP4,945,448	

Ref	Title	Distinction between reference(s) and claim(s)
L1	USP4,953,929	L1 through L4 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
L2	USP4,955,817	
L3	USP4,963,104	
L4	USP4,967,312	
L5	USP4,977,329	L5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
L6	USP4,979,793	L6 and L7 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
L7	USP4,979,794	
L8	USP4,986,625	L8 and L9 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
L9	USP4,989,934	
L10	USP4,990,104	L10 through L16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
L11	USP4,991,062	
L12	USP5,002,495	
L13	USP5,004,434	

L14	USP5,006,286	signal.
L15	USP5,011,425	
L16	USP5,029,254	

Ref	Title	Distinction between reference(s) and claim(s)
M1	USP5,035,482	M1 through M4 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
M2	USP5,035,641	
M3	USP5,040,993	
M4	USP5,041,025	
M5	USP5,043,775	M5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
M6	USP5,044,982	M6 through M14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
M7	USP5,045,635	
M8	USP5,045,971	
M9	USP5,046,955	
M10	USP5,060,373	
M11	USP5,071,219	
M12	USP5,076,656	
M13	USP5,076,688	
M14	USP5,082,344	
M15	USP5,084,802	M15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
M16	USP5,086,422	M16 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
N1	USP5,091,991	N1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
N2	USP5,093,879	N2 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
N3	USP5,094,623	N3 through N8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode
N4	USP5,101,463	
N5	USP5,104,243	



N6	USP5,107,404	optical signal and transmit the laser diode optical signal.
N7	USP5,108,294	
N8	USP5,109,453	
N9	USP5,113,467	N9 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
N10	USP5,116,239	N10 through N14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
N11	USP5,117,476	
N12	USP5,118,362	
N13	USP5,118,904	
N14	USP5,120,578	
N15	USP5,122,893	N15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
N16	USP5,124,885	N16 and N17 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
N17	USP5,125,849	
N18	USP5,127,071	N18 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
N19	USP5,132,871	N19 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
O1	USP5,134,677	O1 through O3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
O2	USP5,134,679	
O3	USP5,136,063	
O4	USP5,136,152	O4 and O5 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
O5	USP5,136,603	
O6	USP5,138,537	O6 through O8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
O7	USP5,138,678	
O8	USP5,140,663	
O9	USP5,155,786	O9 and O10 do not disclose, at least, an optical

O10	USP5,157,769	module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
O11	USP5,167,139	O11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
O12	USP5,168,537	O12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
O13	USP5,170,146	O13 through O17 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
O14	USP5,171,167	
O15	USP5,173,059	
O16	USP5,183,404	
O17	USP5,183,405	

Ref	Title	Distinction between reference(s) and claim(s)
P1	USP5,195,911	P1 through P4 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
P2	USP5,202,536	
P3	USP5,207,597	
P4	USP5,212,752	
P5	USP5,212,754	P5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
P6	USP5,218,519	P6 through P11 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
P7	USP5,225,760	
P8	USP5,233,676	
P9	USP5,233,674	
P10	USP5,234,353	
P11	USP5,238,426	
P12	USP5,241,614	P12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
P13	USP5,247,532	P13 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.
P14	USP5,259,052	P14 through P16 do not disclose, at least, an optical

P15	USP5,259,054	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
P16	USP5,262,923	
P17	USP5,271,079	P17 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
Q1	USP5,274,729	Q1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
Q2	USP5,285,466	Q2 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
Q3	USP5,285,511	Q3 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
Q4	USP5,285,512	Q4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
Q5	USP5,286,207	Q5 through Q16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
Q6	USP5,286,247	
Q7	USP5,288,247	
Q8	USP5,289,347	
Q9	USP5,296,813	
Q10	USP5,299,089	
Q11	USP5,304,069	
Q12	USP5,305,182	
Q13	USP5,311,408	
Q14	USP5,315,679	
Q15	USP5,317,663	
Q16	USP5,321,819	

Ref	Title	Distinction between reference(s) and claim(s)
R1	USP5,329,604	R1 through R3 do not disclose, at least, an optical module comprising a laser diode module to convert
R2	USP5,333,221	

R3	USP5,333,225	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
R4	USP5,337,391	R4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
R5	USP5,337,396	R5 and R6 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
R6	USP5,340,340	
R7	USP5,345,524	R7 and R8 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
R8	USP5,345,530	
R9	USP5,353,364	R9 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.
R10	USP5,353,634	R10 through R12 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
R11	USP5,356,300	
R12	USP5,357,402	
R13	USP5,361,244	R13 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
R14	USP5,361,318	R14 through R16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
R15	USP5,366,664	
R16	USP5,372,515	

Ref	Title	Distinction between reference(s) and claim(s)
S1	USP5,375,040	S1 through S9 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
S2	USP5,383,793	
S3	USP5,388,995	
S4	USP5,390,268	
S5	USP5,393,249	
S6	USP5,397,242	

S7	USP5,398,154	
S8	USP5,398,295	
S9	USP5,408,384	
S10	USP5,414,787	S10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
S11	USP5,416,668	S11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
S12	USP5,416,870	S12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
S13	USP5,416,872	S13 through S16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
S14	USP5,419,717	
S15	USP5,424,573	
S16	USP5,428,703	

Ref	Title	Distinction between reference(s) and claim(s)
T1	USP5,428,704	T1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
T2	USP5,434,747	T2 and T3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
T3	USP5,443,390	
T4	USP5,446,814	T4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
T5	USP5,452,387	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T6	USP5,454,080	T6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
T7	USP5,455,703	T7 does not disclose, at least, an optical module comprising a laser diode electrical signal converter

		to convert serial data, received from a motherboard, into a laser diode electrical signal.
T8	USP5,463,532	T8 and T9 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
T9	USP5,469,332	
T10	USP5,470,257	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T11	USP5,470,259	
T12	USP5,475,734	T12 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
T13	USP5,477,418	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T14	USP5,478,253	
T15	USP5,478,259	T15 and T16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
T16	USP5,478,260	

Ref	Title	Distinction between reference(s) and claim(s)
U1	USP5,481,634	U1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
U2	USP5,482,658	U2 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
U3	USP5,487,678	U3 and U4 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
U4	USP5,491,613	
U5	USP5,491,712	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U6	USP5,494,747	U6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser

		diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
U7	USP5,499,311	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U8	USP5,499,312	U8 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
U9	USP5,504,657	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U10	USP5,506,921	U10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
U11	USP5,506,922	U11 through U14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
U12	USP5,507,668	
U13	USP5,526,235	
U14	USP5,527,991	
U15	USP5,534,662	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U16	USP5,535,296	

Ref	Title	Distinction between reference(s) and claim(s)
V1	USP5,535,364	V1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
V2	USP5,545,845	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V3	USP5,546,281	
V4	USP5,547,385	
V5	USP5,548,641	V5 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
V6	USP5,548,677	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

V7	USP5,554,031	V7 through V9 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
V8	USP5,554,037	
V9	USP5,567,167	
V10	USP5,577,064	V10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
V11	USP5,580,269	V11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
V12	USP5,588,850	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V13	USP5,598,319	V13 and V14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
V14	USP5,599,595	
V15	USP5,600,470	V15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
V16	USP5,613,860	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
W1	USP5,629,919	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
W2	USP5,631,998	
W3	USP5,653,596	
W4	USP5,659,459	W4 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
W5	USP5,675,428	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
W6	USP5,687,267	
W7	USP5,717,533	
W8	USP5,724,729	
W9	USP5,726,864	



W10	USP5,734,558	
W11	USP5,736,782	
W12	USP5,747,735	
W13	USP5,767,999	
W14	USP5,779,504	
W15	USP5,797,771	
W16	USP5,836,774	

Ref	Title	Distinction between reference(s) and claim(s)
X1	USP5,864,468	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
X2	USP5,879,173	
X3	DE.4239124 A1	X3 through X6 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
X4	EP 0 232792 A1	
X5	EP.0 228 278	
X6	EP.0 305112 A2	
X7	EP.0 314 651 A2	X7 and X8 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
X8	EP.0 413 489 A2	
X9	EP.0 437 161 A2	X9 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
X10	EP.0 456 298 B1	X10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
X11	EP.0 530 791 A2	X11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
X12	EP.0 535 473 A1	X12 through X14 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
X13	EP.0 588 014 A2	
X14	EP.0 600 645 A1	
X15	EP.0 613 032 A2	X15 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit

		board.
X16	EP.0 652 696 A1	X16 through X18 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
X17	EP.0 656 696 A1	
X18	EP.0 662 259 B1	
X19	EP.442 608 A2	X19 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
X20	WO 94/12900	X20 and X21 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
X21	JP.1-237783	

Ref	Title	Distinction between reference(s) and claim(s)
Y1	JP.2-151084	Y1 through Y4 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
Y2	JP.2-181710	
Y3	JP.2-278212	
Y4	JP.2-87837	
Y5	JP.3-20458	Y5 through Y7 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
Y6	JP.3-94869	
Y7	JP.4-109593	
Y8	JP.4-122905	Y8 through Y10 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
Y9	JP.4-165312	
Y10	JP.4-211208	
Y11	JP.4-221207	Y11 through Y13 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
Y12	JP.4-229962	
Y13	JP.4-230978	
Y14	JP.4-234715	Y14 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
Y15	JP.4-270305	Y15 through Y18 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
Y16	JP.4-50901	
Y17	JP.4-87809	
Y18	JP.5-052802	
Y19	JP.5-134147	Y19 does not disclose, at least, an optical module

		comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
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Ref	Title	Distinction between reference(s) and claim(s)
Z1	JP.5-152607	Z1 and Z2 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
Z2	JP.5-188250	
Z3	JP.5-211379	Z3 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
Z4	JP.5-218581	Z4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
Z5	JP.5-290913	Z5 through Z8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
Z6	JP.5-70955	
Z7	JP.61-158046	
Z8	JP.61-188385	
Z9	JP.63-009325	Z9 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.
Z10	JP.63-16496	Z10 through Z19 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
Z11	JP.63-65967	
Z12	JP.63-65978	
Z13	JP.63-82998	
Z14	U-3-20458	
Z15	U-3-94869	
Z16	U-4-87809	
Z17	U-5-052802	
Z18	U-5-70955	
Z19	U-61-158046	

Ref	Title	Distinction between reference(s) and claim(s)
AA1	U-61-188385	AA1 through AA5 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser
AA2	U-63-16496	
AA3	U-63-65967	

AA4	U-63-65978	diode optical signal and transmit the laser diode optical signal.
AA5	U-63-82998	

Ref	Title	Distinction between reference(s) and claim(s)
BB1	AT&T Microelectronics, "1408-Type ODL Transceiver"Feb. 1994 preliminary data sheet.p.2-10	BB1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
BB2	Ronald LSoderstrom et al., "An optical Data Link using a CD laser", SPIE Vol.1577 High Speed Fiber Networks and Channels, pp.163-173, 1991	BB2 through BB4 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
BB3	BCP, Inc. "Gigabits Over Multimode Optical Fiber" no date	
BB4	Ronald L. Soderstrom et al., "CD laser optical Data Links for Workstation and Midrange Computers", IEEE p.505-509, 1993.	
BB5	FDDI Low-Cost Fiber Physical Layer Medium Dependent (LCF-PMD) Common Receiver Footprint, no date.	BB5 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.
BB6	HP Module HFBR-5103, FDDI Data Sheet, <a href="http://www.hp.com/HP-COMP/fiber/hfbr5103.html">http://www.hp.com/HP-COMP/fiber/hfbr5103.html</a> , Jun. 11, 1998	BB6 and BB7 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
BB7	IBM Technical Disclosure Bulletin "Optical Link Card Guide/Retention System", <a href="http://www.patents.ibm.com/tbbs/tdb?&amp;order=93A+60964">www.patents.ibm.com/tbbs/tdb?&amp;order=93A+60964</a> , April 1993	
BB8	IBM, "A Proposal for a New High Performance ... "Optoelectronics Enterprise Oct. 1992 ANSI Meeting, Oct. 13, 1992	BB8 and BB9 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
BB9	IBM, et al., "GLM Family", FCSI-301-Ren Sun, GLM, , , , , FCSI-301-Rev1.0, Feb. 16, 1994.	
BB10	Methode Electronics, Inc., "DM 1063-DBLM9 Copper Gigabit Link Module" data sheet. (no date)	BB10 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
BB11	"Raylan Joins Low-Wavelength Push -850 nm Transceiver", Electronic Engineering Times, Aug. 1993.	BB11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
CC1	Sumitomo Electric Fiber Optics Corp. "Transceiver Manufacturers to Support Common Footprint for Desktop FDDI Applications," June 23, 1992.	CC1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
CC2	Sun Microsystems computer Co. et al., Gigabit Interface Converter (GBIC), Rev 4.4, Dec. 1, 1997	This reference does not qualify as prior art.

		Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
CC3	Siemens, "Who provides Low-Cost Transceivers for all Standards?" no date.	CC3 through CC5 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
CC4	AMP "PC Board Connectors", Product Guide 82759, pp. 7104-7108, Catalog E2750 issued Jun. 1991	
CC5	AMP Inc. "Lytel Molded-Optronic SC Duplex Transceiver" Catalog 65922, Dec. 1993.	
CC6	AMPHENOL Engineering News vol. 7 No. 6., pp241, 264-65, Nov. 1994	CC6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
CC7	Baldwin and Kellerman, "Fiber Optic Module Interface Attachment" Research disclosure, Kenneth Mason Publications Ltd., England, Apr. 1991.	CC7 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
CC8	Block and Gaio "Optical Link Card guide/Retention Sys" RESEARCH DISCLOSURE Kenneth Mason Publications Ltd., England, Apr. 1993.	CC8 and CC9 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
CC9	Cinch Hinge Connectors Catalog CM-16, Jul. 1963.	
CC10	Martin H. Weik, "Communication Standard Dictionary" p.454. definition of LED, Van Nostrand Reinhold Co.	CC10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
CC11	Edward R. Salmon, Encapsulation of Electronic Devices and Components, Marcel Dekker Inc., New York, 1987	CC11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
DD1	Dieter Gwinner, Conductive Coatings: Vacuum Evaporated Aluminum for Selective Shielding of Plastic Housings, no date.	DD1 through DD3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
DD2	HEADS Up--Sumitomo Electric Lightwave joins Other in Announcement, May 11, 1995	
DD3	Robert C. Herron, High Density Input/Output Connector Systems, 3M Electronic Products Divisions, 1990	
DD4	Shortwave Opto Assembly, IBM OptoElectronic Enterprises; IBM/OEE Market Survey Only, Rev. 1, Jan. 6, 1993	DD4 and DD5 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
DD5	"Minimizing Electrostatic Discharge Damage to a Cartridge", IBM Technical Disclosure Bulletin, vol. 29 No. 10. Mar., 1987	
DD6	Japanese Standards Association " F04 Type Connectors for Optical Fiber Cords JIS C 5973" Japanese Standards Association, 1990.	DD6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

DD7	Ronald L.Soderstrom et al.,A Miniaturized Fiber Optic Laser Receptacle Using a Compact Disk(CD)··· FOC/LAN`87&MFOC-WEST,pp.383-385,no date.	DD7 through DD9 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
DD8	"Transceiver Module Assembly", IBM Technical Disclosure Bulletin,Oct.1979,https://www.delphion.com/tbds/tdb?o=79A+06370,last visited Mar.3,2005.	
DD9	Ronald L.Soderstrom et al.,Optical Components and Electronic Packaging for High Performance Optical Data Links,THE RESEARCH INVESTMENT,p.19-28(no date).	
DD10	Thomas & Betts INFO-LAN Modem 1998	DD10 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.
DD11	"Active component manufacturers lower the cost of fiber to the desktop",Lightwave,Feb.1994 pp.58,67.	DD11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
EE1	Fibre Distributed Data Interface(FDDI)-Token Ring Low-Cost Fibre Physical Layer Medium Dependent (LCF-PMD),American National Standards Institute,1996.	EE1 through EE11 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
EE2	Communications Standard Dictionary; p.454,definition of inhomogeneous fiber,Van Nostrand Reinhold Publishing,1983	
EE3	"Transmitter/receiver assembly simplifies use of fibre optics", Design Engineering,p.19,Button Press,Ltd.,April 1980.	
EE4	Ronald L.Soderstrom et al., "CD laser as a fiber optic source for computer data links",Fiber Optic Datacom and Computer Networks,SPIE-The International Society for Optical Engineerings,Vol.1577,pp.174-181,1988	
EE5	David A.Knodel et al., "Open Fibre Control,a laser safety interlock technique",High-Speed Fiber Networks and Channels,SPIE-The International Society for Optical Engineering Proceedings,Vol.991,pp.179-182,1992	
EE6	"IBM Technical Disclosure Bulletin, Electrostatic Dissipative Enclosed Connector", Vol.34,No.7B,Dec.1991	
EE7	"High Reliability SW Laser For Optical Data Links", LEOS '93 Conference Proceedings, IEEE Lasers and Electro-Optics Society 1993 Annual Meeting;	
EE8	Minimizing Electrostatic Discharge to a Cartridge,IBM Technical Disclosure Bulletin,March 1987,https://www.delphion.com/tdb?o=87A%2060509 ,last visited Mar.8,2005.	
EE9	K.P.Jackson et al., "High-Density, Array, Optical Interconnects for Multi-Chip Module Conference MCMC-92 Proceedings,IEEE Computer Society Press.	

EE10	TDB:Stackable Circuit Card Packaging within a Logic Cage,IBM Technical Disclosure Bulletin,Dec.1992, <a href="https://www.delphion.com/tbds/tdb?o=92A%2063485">https://www.delphion.com/tbds/tdb?o=92A%2063485</a> ,last visited Mar.8,2005	
EE11	Jeff Hechi,The Laser Guidebook,2nd ed.,McGraw Hill,Inc.,1992	

Claim Chart for Claims 176-177 of 10/766,488

Ref	Title	Distinction between reference(s) and claim(s)
A1	Re.32,502	A1 through A12 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
A2	USP2,899,669	
A3	USP3,264,601	
A4	USP3,332,860	
A5	USP3,474,380	
A6	USP3,497,866	
A7	USP3,523,269	
A8	USP3,670,290	
A9	USP3,673,545	
A10	USP3,706,869	
A11	USP3,737,729	
A12	USP3,790,923	
A13	USP3,792,284	A13 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
A14	USP3,805,116	A14 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
A15	USP3,809,908	A15 and A16 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
A16	USP3,976,877	

Ref	Title	Distinction between reference(s) and claim(s)
B1	USP3,990,761	B1 through B3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
B2	USP4,047,242	
B3	USP4,156,903	
B4	USP4,161,650	B4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
B5	USP4,167,303	B5 through B7 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
B6	USP4,176,897	
B7	USP4,217,019	
B8	USP4,217,488	B8 does not disclose, at least, an optical module comprising a laser diode electrical signal converter



		to convert serial data, received from a motherboard, into a laser diode electrical signal.
B9	USP4,226,491	B9 and B10 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
B10	USP4,234,968	
B11	USP4,249,266	B11 through B13 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
B12	USP4,252,402	
B13	USP4,257,124	
B14	USP4,268,756	B14 and B15 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
B15	USP4,273,413	
B16	USP4,276,656	B16 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
C1	USP4,294,682	C1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
C2	USP4,295,181	C2 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
C3	USP4,301,543	C3 and C4 do not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.
C4	USP4,330,870	
C5	USP4,345,808	C5 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
C6	USP4,347,655	C6 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal

		converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.
C7	USP4,357,606	C7 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
C8	USP4,360,248	C8 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
C9	USP4,366,565	C9 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.
C10	USP4,369,494	C10 through C15 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
C11	USP4,380,360	
C12	USP4,388,671	
C13	USP4,393,516	
C14	USP4,398,073	
C15	USP4,398,780	
C16	USP4,399,563	C16 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.

Ref	Title	Distinction between reference(s) and claim(s)
D1	USP4,408,273	D1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
D2	USP4,422,088	D2 through D4 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
D3	USP4,427,879	
D4	USP4,430,699	
D5	USP4,434,537	D5 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical

		signal and transmit the laser diode optical signal.
D6	USP4,437,190	D6 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
D7	USP4,439,006	D7 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.
D8	USP4,446,515	D8 and D9 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
D9	USP4,449,244	
D10	USP4,449,784	D10 through D13 not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
D11	USP4,453,903	
D12	USP4,459,658	
D13	USP4,461,537	
D14	USP4,470,154	D14 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
D15	USP4,486,059	D15 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
D16	USP4,493,113	D16 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
E1	USP4,501,021	E1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
E2	USP4,502,130	E2 through E5 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
E3	USP4,505,035	
E4	USP4,506,937	
E5	USP4,510,553	
E6	USP4,511,207	E6 does not disclose, at least, an optical module

		comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.
E7	USP4,514,586	E7 through E14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
E8	USP4,516,204	
E9	USP4,519,670	
E10	USP4,519,672	
E11	USP4,519,673	
E12	USP4,522,463	
E13	USP4,526,438	
E14	USP4,526,986	
E15	USP4,527,286	E15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
E16	USP4,529,266	E16 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
F1	USP4,530,566	F1 through F3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
F2	USP4,531,810	
F3	USP4,533,208	
F4	USP4,533,209	F4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
F5	USP4,534,616	F5 through F8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
F6	USP4,534,617	
F7	USP4,535,233	
F8	USP4,537,468	
F9	USP4,539,476	F9 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
F10	USP4,540,237	F10 through F16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode
F11	USP4,540,246	
F12	USP4,541,036	

F13	USP4,541,685	optical signal and transmit the laser diode optical signal.
F14	USP4,542,076	
F15	USP4,544,231	
F16	USP4,544,233	

Ref	Title	Distinction between reference(s) and claim(s)
G1	USP4,544,234	G1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
G2	USP4,545,074	G2 and G3 do not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.
G3	USP4,545,077	
G4	USP4,545,642	G4 through G8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
G5	USP4,545,643	
G6	USP4,545,644	
G7	USP4,545,645	
G8	USP4,548,465	
G9	USP4,548,466	G9 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
G10	USP4,548,467	G10 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
G11	USP4,549,782	G11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
G12	USP4,549,783	G12 through G14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
G13	USP4,550,975	
G14	USP4,553,811	
G15	USP4,553,813	G15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
G16	USP4,553,814	G16 does not disclose, at least, an optical module comprising a laser diode module to convert a laser

		diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
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Ref	Title	Distinction between reference(s) and claim(s)
H1	USP4,556,279	H1 through H10 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
H2	USP4,556,281	
H3	USP4,556,282	
H4	USP4,557,551	
H5	USP4,560,234	
H6	USP4,563,057	
H7	USP4,566,753	
H8	USP4,568,145	
H9	USP4,569,569	
H10	USP4,573,760	
H11	USP4,580,295	H11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
H12	USP4,580,872	H12 through H16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
H13	USP4,588,256	
H14	USP4,589,728	
H15	USP4,597,631	
H16	USP4,614,836	

Ref	Title	Distinction between reference(s) and claim(s)
I1	USP4,629,270	I1 and I2 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
I2	USP4,634,239	
I3	USP4,641,371	I3 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.
I4	USP4,647,148	I4 through I16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
I5	USP4,652,976	
I6	USP4,663,240	
I7	USP4,663,603	
I8	USP4,678,264	
I9	USP4,679,883	
I10	USP4,695,106	

I11	USP4,697,864	
I12	USP4,708,433	
I13	USP4,715,675	
I14	USP4,720,630	
I15	USP4,722,584	
I16	USP4,736,100	

Ref	Title	Distinction between reference(s) and claim(s)
J1	USP4,756,593	J1 through J15 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
J2	USP4,762,388	
J3	USP4,767,179	
J4	USP4,772,931	
J5	USP4,779,952	
J6	USP4,789,218	
J7	USP4,798,430	
J8	USP4,798,440	
J9	USP4,807,006	
J10	USP4,807,955	
J11	USP4,808,115	
J12	USP4,811,165	
J13	USP4,812,133	
J14	USP4,821,145	
J15	USP4,823,235	
J16	USP4,838,630	J16 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
K1	USP4,840,451	K1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
K2	USP4,844,581	K2 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.
K3	USP4,847,711	K3 through K9 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode
K4	USP4,847,771	
K5	USP4,849,944	

K6	USP4,857,002	optical signal and transmit the laser diode optical signal.
K7	USP4,862,327	
K8	USP4,872,212	
K9	USP4,872,736	
K10	USP4,881,789	K10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
K11	USP4,884,336	K11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
K12	USP4,897,711	K12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
K13	USP4,906,197	K13 through K16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
K14	USP4,927,225	
K15	USP4,944,568	
K16	USP4,945,448	

Ref	Title	Distinction between reference(s) and claim(s)
L1	USP4,953,929	L1 through L4 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
L2	USP4,955,817	
L3	USP4,963,104	
L4	USP4,967,312	
L5	USP4,977,329	L5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
L6	USP4,979,793	L6 and L7 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
L7	USP4,979,794	
L8	USP4,986,625	L8 and L9 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
L9	USP4,989,934	
L10	USP4,990,104	L10 through L16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
L11	USP4,991,062	
L12	USP5,002,495	
L13	USP5,004,434	



L14	USP5,006,286	signal.
L15	USP5,011,425	
L16	USP5,029,254	

Ref	Title	Distinction between reference(s) and claim(s)
M1	USP5,035,482	M1 through M4 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
M2	USP5,035,641	
M3	USP5,040,993	
M4	USP5,041,025	
M5	USP5,043,775	M5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
M6	USP5,044,982	M6 through M14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
M7	USP5,045,635	
M8	USP5,045,971	
M9	USP5,046,955	
M10	USP5,060,373	
M11	USP5,071,219	
M12	USP5,076,656	
M13	USP5,076,688	
M14	USP5,082,344	
M15	USP5,084,802	M15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
M16	USP5,086,422	M16 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
N1	USP5,091,991	N1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
N2	USP5,093,879	N2 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
N3	USP5,094,623	N3 through N8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode
N4	USP5,101,463	
N5	USP5,104,243	

N6	USP5,107,404	optical signal and transmit the laser diode optical signal.
N7	USP5,108,294	
N8	USP5,109,453	
N9	USP5,113,467	N9 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
N10	USP5,116,239	N10 through N14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
N11	USP5,117,476	
N12	USP5,118,362	
N13	USP5,118,904	
N14	USP5,120,578	
N15	USP5,122,893	N15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
N16	USP5,124,885	N16 and N17 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
N17	USP5,125,849	
N18	USP5,127,071	N18 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
N19	USP5,132,871	N19 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
O1	USP5,134,677	O1 through O3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
O2	USP5,134,679	
O3	USP5,136,063	
O4	USP5,136,152	O4 and O5 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
O5	USP5,136,603	
O6	USP5,138,537	O6 through O8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
O7	USP5,138,678	
O8	USP5,140,663	
O9	USP5,155,786	O9 and O10 do not disclose, at least, an optical

O10	USP5,157,769	module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
O11	USP5,167,139	O11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
O12	USP5,168,537	O12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
O13	USP5,170,146	O13 through O17 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
O14	USP5,171,167	
O15	USP5,173,059	
O16	USP5,183,404	
O17	USP5,183,405	

Ref	Title	Distinction between reference(s) and claim(s)
P1	USP5,195,911	P1 through P4 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
P2	USP5,202,536	
P3	USP5,207,597	
P4	USP5,212,752	
P5	USP5,212,754	P5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
P6	USP5,218,519	P6 through P11 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
P7	USP5,225,760	
P8	USP5,233,676	
P9	USP5,233,674	
P10	USP5,234,353	
P11	USP5,238,426	
P12	USP5,241,614	P12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
P13	USP5,247,532	P13 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.
P14	USP5,259,052	P14 through P16 do not disclose, at least, an optical

P15	USP5,259,054	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
P16	USP5,262,923	
P17	USP5,271,079	P17 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
Q1	USP5,274,729	Q1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
Q2	USP5,285,466	Q2 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
Q3	USP5,285,511	Q3 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
Q4	USP5,285,512	Q4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
Q5	USP5,286,207	Q5 through Q16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
Q6	USP5,286,247	
Q7	USP5,288,247	
Q8	USP5,289,347	
Q9	USP5,296,813	
Q10	USP5,299,089	
Q11	USP5,304,069	
Q12	USP5,305,182	
Q13	USP5,311,408	
Q14	USP5,315,679	
Q15	USP5,317,663	
Q16	USP5,321,819	

Ref	Title	Distinction between reference(s) and claim(s)
R1	USP5,329,604	R1 through R3 do not disclose, at least, an optical module comprising a laser diode module to convert
R2	USP5,333,221	

R3	USP5,333,225	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
R4	USP5,337,391	R4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
R5	USP5,337,396	R5 and R6 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
R6	USP5,340,340	
R7	USP5,345,524	R7 and R8 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
R8	USP5,345,530	
R9	USP5,353,364	R9 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.
R10	USP5,353,634	R10 through R12 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
R11	USP5,356,300	
R12	USP5,357,402	
R13	USP5,361,244	R13 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
R14	USP5,361,318	R14 through R16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
R15	USP5,366,664	
R16	USP5,372,515	

Ref	Title	Distinction between reference(s) and claim(s)
S1	USP5,375,040	S1 through S9 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
S2	USP5,383,793	
S3	USP5,388,995	
S4	USP5,390,268	
S5	USP5,393,249	
S6	USP5,397,242	

S7	USP5,398,154	
S8	USP5,398,295	
S9	USP5,408,384	
S10	USP5,414,787	S10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
S11	USP5,416,668	S11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
S12	USP5,416,870	S12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
S13	USP5,416,872	S13 through S16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
S14	USP5,419,717	
S15	USP5,424,573	
S16	USP5,428,703	

Ref	Title	Distinction between reference(s) and claim(s)
T1	USP5,428,704	T1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
T2	USP5,434,747	T2 and T3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
T3	USP5,443,390	
T4	USP5,446,814	T4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
T5	USP5,452,387	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T6	USP5,454,080	T6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
T7	USP5,455,703	T7 does not disclose, at least, an optical module comprising a laser diode electrical signal converter

		to convert serial data, received from a motherboard, into a laser diode electrical signal.
T8	USP5,463,532	T8 and T9 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
T9	USP5,469,332	
T10	USP5,470,257	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T11	USP5,470,259	
T12	USP5,475,734	T12 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
T13	USP5,477,418	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T14	USP5,478,253	
T15	USP5,478,259	T15 and T16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
T16	USP5,478,260	

Ref	Title	Distinction between reference(s) and claim(s)
U1	USP5,481,634	U1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
U2	USP5,482,658	U2 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
U3	USP5,487,678	U3 and U4 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
U4	USP5,491,613	
U5	USP5,491,712	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U6	USP5,494,747	U6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser

		diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
U7	USP5,499,311	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U8	USP5,499,312	U8 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
U9	USP5,504,657	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U10	USP5,506,921	U10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
U11	USP5,506,922	U11 through U14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
U12	USP5,507,668	
U13	USP5,526,235	
U14	USP5,527,991	
U15	USP5,534,662	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U16	USP5,535,296	

Ref	Title	Distinction between reference(s) and claim(s)
V1	USP5,535,364	V1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
V2	USP5,545,845	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V3	USP5,546,281	
V4	USP5,547,385	
V5	USP5,548,641	V5 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
V6	USP5,548,677	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.



V7	USP5,554,031	V7 through V9 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
V8	USP5,554,037	
V9	USP5,567,167	
V10	USP5,577,064	V10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
V11	USP5,580,269	V11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
V12	USP5,588,850	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V13	USP5,598,319	V13 and V14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
V14	USP5,599,595	
V15	USP5,600,470	V15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
V16	USP5,613,860	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
W1	USP5,629,919	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
W2	USP5,631,998	
W3	USP5,653,596	
W4	USP5,659,459	W4 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
W5	USP5,675,428	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
W6	USP5,687,267	
W7	USP5,717,533	
W8	USP5,724,729	
W9	USP5,726,864	

W10	USP5,734,558	
W11	USP5,736,782	
W12	USP5,747,735	
W13	USP5,767,999	
W14	USP5,779,504	
W15	USP5,797,771	
W16	USP5,836,774	

Ref	Title	Distinction between reference(s) and claim(s)
X1	USP5,864,468	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
X2	USP5,879,173	
X3	DE.4239124 A1	X3 through X6 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
X4	EP 0 232792 A1	
X5	EP.0 228 278	
X6	EP.0 305112 A2	
X7	EP.0 314 651 A2	X7 and X8 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
X8	EP.0 413 489 A2	
X9	EP.0 437 161 A2	X9 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
X10	EP.0 456 298 B1	X10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
X11	EP.0 530 791 A2	X11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
X12	EP.0 535 473 A1	X12 through X14 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
X13	EP.0 588 014 A2	
X14	EP.0 600 645 A1	
X15	EP.0 613 032 A2	X15 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit

		board.
X16	EP.0 652 696 A1	X16 through X18 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
X17	EP.0 656 696 A1	
X18	EP.0 662 259 B1	
X19	EP.442 608 A2	X19 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
X20	WO 94/12900	X20 and X21 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
X21	JP.1-237783	

Ref	Title	Distinction between reference(s) and claim(s)
Y1	JP.2-151084	Y1 through Y4 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
Y2	JP.2-181710	
Y3	JP.2-278212	
Y4	JP.2-87837	
Y5	JP.3-20458	Y5 through Y7 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
Y6	JP.3-94869	
Y7	JP.4-109593	
Y8	JP.4-122905	Y8 through Y10 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
Y9	JP.4-165312	
Y10	JP.4-211208	
Y11	JP.4-221207	Y11 through Y13 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
Y12	JP.4-229962	
Y13	JP.4-230978	
Y14	JP.4-234715	Y14 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
Y15	JP.4-270305	Y15 through Y18 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
Y16	JP.4-50901	
Y17	JP.4-87809	
Y18	JP.5-052802	
Y19	JP.5-134147	Y19 does not disclose, at least, an optical module

		comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
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Ref	Title	Distinction between reference(s) and claim(s)
Z1	JP.5-152607	Z1 through Z2 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
Z2	JP.5-188250	
Z3	JP.5-211379	Z3 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
Z4	JP.5-218581	Z4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
Z5	JP.5-290913	Z5 through Z8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
Z6	JP.5-70955	
Z7	JP.61-158046	
Z8	JP.61-188385	
Z9	JP.63-009325	Z9 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.
Z10	JP.63-16496	Z10 through Z19 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
Z11	JP.63-65967	
Z12	JP.63-65978	
Z13	JP.63-82998	
Z14	U-3-20458	
Z15	U-3-94869	
Z16	U-4-87809	
Z17	U-5-052802	
Z18	U-5-70955	
Z19	U-61-158046	

Ref	Title	Distinction between reference(s) and claim(s)
AA1	U-61-188385	AA1 through AA5 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser
AA2	U-63-16496	
AA3	U-63-65967	

AA4	U-63-65978	diode optical signal and transmit the laser diode optical signal.
AA5	U-63-82998	

Ref	Title	Distinction between reference(s) and claim(s)
BB1	AT&T Microelectronics, "1408-Type ODL Transceiver"Feb. 1994 preliminary data sheet.p.2-10	BB1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
BB2	Ronald LSoderstrom et al., "An optical Data Link using a CD laser", SPIE Vol.1577 High Speed Fiber Networks and Channels, pp.163-173, 1991	BB2 through BB4 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
BB3	BGP, Inc. "Gigabits Over Multimode Optical Fiber" no date	
BB4	Ronald L. Soderstrom et al., "CD laser optical Data Links for Workstation and Midrange Computers", IEEE p.505-509, 1993.	
BB5	FDDI Low-Cost Fiber Physical Layer Medium Dependent (LCF-PMD) Common Receiver Footprint, no date.	BB5 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.
BB6	HP Module HFBR-5103, FDDI Data Sheet, <a href="http://www.hp.com/HP-COMP/fiber/hfbr5103.html">http://www.hp.com/HP-COMP/fiber/hfbr5103.html</a> , Jun. 11, 1998	BB6 and BB7 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
BB7	IBM Technical Disclosure Bulletin "Optical Link Card Guide/Retention System", <a href="http://www.patents.ibm.com/tbbs/tdb?&amp;order=93A">www.patents.ibm.com/tbbs/tdb?&amp;order=93A</a> +60964, April 1993	
BB8	IBM, "A Proposal for a New High Performance..." "Optoelectronics Enterprise Oct. 1992 ANSI Meeting, Oct. 13, 1992	BB8 and BB9 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
BB9	IBM, et al, "GLM Family", FCSI-301-Ren Sun, GLM, , , , , FCSI-301-Rev1.0, Feb. 16, 1994.	
BB10	Methode Electronics, Inc., "DM 1063-DBLM9 Copper Gigabit Link Module" data sheet. (no date)	BB10 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
BB11	"Raylan Joins Low-Wavelength Push -850 nm Transceiver", Electronic Engineering Times, Aug. 1993.	BB11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
CC1	Sumitomo Electric Fiber Optics Corp. "Transceiver Manufacturers to Support Common Footprint for Desktop FDDI Applications," June 23, 1992.	CC1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
CC2	Sun Microsystems computer Co. et al., Gigabit Interface Converter (GBIC), Rev 4.4, Dec. 1, 1997	This reference does not qualify as prior art.

		Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
CC3	Siemens, "Who provides Low-Cost Transceivers for all Standards?" no date.	CC3 through CC5 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
CC4	AMP "PC Board Connectors", Product Guide 82759, pp. 7104-7108, Catalog E2750 issued Jun. 1991	
CC5	AMP Inc. "Lytel Molded-Optronic SC Duplex Transceiver" Catalog 65922, Dec. 1993.	
CC6	AMPHENOL Engineering News vol. 7 No. 6., pp241, 264-65, Nov. 1994	CC6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
CC7	Baldwin and Kellerman, "Fiber Optic Module Interface Attachment" Research disclosure, Kenneth Mason Publications Ltd., England, Apr. 1991.	CC7 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
CC8	Block and Gaio "Optical Link Card guide/Retention Sys" RESEARCH DISCLOSURE Kenneth Mason Publications Ltd., England, Apr. 1993.	CC8 and CC9 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
CC9	Cinch Hinge Connectors Catalog CM-16, Jul. 1963.	
CC10	Martin H. Weik, "Communication Standard Dictionary" p.454. definition of LED, Van Nostrand Reinhold Co.	CC10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
CC11	Edward R. Salmon, Encapsulation of Electronic Devices and Components, Marcel Dekker Inc., New York, 1987	CC11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
DD1	Dieter Gwinner, Conductive Coatings: Vacuum Evaporated Aluminum for Selective Shielding of Plastic Housings, no date.	DD1 through DD3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
DD2	HEADS Up--Sumitomo Electric Lightwave joins Other in Announcement, May 11, 1995	
DD3	Robert C. Herron, High Density Input/Output Connector Systems, 3M Electronic Products Divisions, 1990	
DD4	Shortwave Opto Assembly, IBM OptoElectronic Enterprises; IBM/OEE Market Survey Only, Rev. 1, Jan. 6, 1993	DD4 through DD5 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
DD5	"Minimizing Electrostatic Discharge Damage to a Cartridge", IBM Technical Disclosure Bulletin, vol. 29 No. 10. Mar., 1987	
DD6	Japanese Standards Association "F04 Type Connectors for Optical Fiber Cords JIS C 5973" Japanese Standards Association, 1990.	DD6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

DD7	Ronald LSoderstrom et al.,A Miniaturized Fiber Optic Laser Receptacle Using a Compact Disk(CD)··· FOC/LAN '87&MFOC-WEST,pp.383-385,no date.	DD7 and DD9 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
DD8	"Transceiver Module Assembly", IBM Technical Disclosure Bulletin,Oct.1979,https://www.delphion.com/tbds/tdb?o=79A+06370,last visited Mar.3,2005.	
DD9	Ronald L.Soderstrom et al.,Optical Components and Electronic Packaging for High Performance Optical Data Links,THE RESEARCH INVESTMENT,p.19-28(no date).	
DD10	Thomas & Betts INFO-LAN Modem 1998	DD10 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and photo diode module are electrically connected proximate to a first edge of the circuit board.
DD11	"Active component manufacturers lower the cost of fiber to the desktop",Lightwave,Feb.1994 pp.58,67.	DD11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
EE1	Fibre Distributed Date Interface(FDDI)-Token Ring Low-Cost Fibre Physical Layer Medium Dependent (LCF-PMD),American National Standards Institute,1996.	EE1 through EE11 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
EE2	Communications Standard Dictionary; p.454,definition of inhomogeneous fiber,Van Nostrand Reinhold Publishing,1983	
EE3	"Transmitter/receiver assembly simplifies use of fibre optics", Design Engineering,p.19,Button Press,Ltd.,April 1980.	
EE4	Ronald L.Soderstrom et al., "CD laser as a fiber optic source for computer date links",Fiber Optic Datacom and Computer Networks,SPIE-The International Society for Optical Engineerdings, Vol.1577,pp.174-181,1988	
EE5	David A.Knodel et al., "Open Fibre Control,a laser safety interlock technique",High-Speed Fiber Networks and Channels,SPIE-The International Society for Optical Engineering Proceedings,Vol.991,pp.179-182,1992	
EE6	"IBM Technical Disclosure Bulletin, Electrostatic Dissipative Enclosed Connector", Vol.34,No.7B,Dec.1991	
EE7	"High Reliability SW Laser For Optical Data Links", LEOS '93 Conference Proceedings, IEEE Lasers and Electro-Optics Society 1993 Annual Meeting;	
EE8	Minimizing Electrostatic Discharge to a Cartridge,IBM Technical Disclosure Bulletin,March 1987,https://www.delphion.com/tdb?o=87A%2060509 ,last visited Mar.8,2005.	
EE9	K.P.Jackson et al., "High-Density,Array,Optical Interconnects for Multi-Chip Module Conference MCMC-92 Proceedings,IEEE Computer Society Press.	

EE10	TDB:Stackable Circuit Card Packaging within a Logic Cage,IBM Technical Disclosure Bulletin,Dec.1992, <a href="https://www.delphion.com/tbds/tdb?o=92A%2063485">https://www.delphion.com/tbds/tdb?o=92A%2063485</a> ,last visited Mar.8,2005	
EE11	Jeff Hechi,The Laser Guidebook,2nd ed.,McGraw Hill,Inc.,1992	



Claim Chart for Claims 178-179 of 10/766,488

Ref	Title	Distinction between reference(s) and claim(s)
A1	Re.32,502	A1 through A12 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
A2	USP2,899,669	
A3	USP3,264,601	
A4	USP3,332,860	
A5	USP3,474,380	
A6	USP3,497,866	
A7	USP3,523,269	
A8	USP3,670,290	
A9	USP3,673,545	
A10	USP3,706,869	
A11	USP3,737,729	
A12	USP3,790,923	
A13	USP3,792,284	A13 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
A14	USP3,805,116	A14 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
A15	USP3,809,908	A15 and A16 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
A16	USP3,976,877	

Ref	Title	Distinction between reference(s) and claim(s)
B1	USP3,990,761	B1 through B3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
B2	USP4,047,242	
B3	USP4,156,903	
B4	USP4,161,650	B4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
B5	USP4,167,303	B5 through B7 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
B6	USP4,176,897	
B7	USP4,217,019	
B8	USP4,217,488	B8 does not disclose, at least, an optical module comprising a laser diode electrical signal converter

		to convert serial data, received from a motherboard, into a laser diode electrical signal.
B9	USP4,226,491	B9 and B10 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
B10	USP4,234,968	
B11	USP4,249,266	B11 through B13 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
B12	USP4,252,402	
B13	USP4,257,124	
B14	USP4,268,756	B14 and B15 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
B15	USP4,273,413	
B16	USP4,276,656	B16 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
C1	USP4,294,682	C1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
C2	USP4,295,181	C2 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
C3	USP4,301,543	C3 and C4 do not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and a photo diode module are electrically connected proximate to a first edge of the circuit board.
C4	USP4,330,870	
C5	USP4,345,808	C5 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
C6	USP4,347,655	C6 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal

		converter are mounted, and to which a laser diode module and a photo diode module are electrically connected proximate to a first edge of the circuit board.
C7	USP4,357,606	C7 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
C8	USP4,360,248	C8 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
C9	USP4,366,565	C9 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and a photo diode module are electrically connected proximate to a first edge of the circuit board.
C10	USP4,369,494	C10 through C15 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
C11	USP4,380,360	
C12	USP4,388,671	
C13	USP4,393,516	
C14	USP4,398,073	
C15	USP4,398,780	
C16	USP4,399,563	C16 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and a photo diode module are electrically connected proximate to a first edge of the circuit board.

Ref	Title	Distinction between reference(s) and claim(s)
D1	USP4,408,273	D1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
D2	USP4,422,088	D2 through D4 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
D3	USP4,427,879	
D4	USP4,430,699	
D5	USP4,434,537	D5 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical

		signal and transmit the laser diode optical signal.
D6	USP4,437,190	D6 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
D7	USP4,439,006	D7 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and a photo diode module are electrically connected proximate to a first edge of the circuit board.
D8	USP4,446,515	D8 and D9 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
D9	USP4,449,244	
D10	USP4,449,784	D10 through D13 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
D11	USP4,453,903	
D12	USP4,459,658	
D13	USP4,461,537	
D14	USP4,470,154	D14 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
D15	USP4,486,059	D15 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
D16	USP4,493,113	D16 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
E1	USP4,501,021	E1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
E2	USP4,502,130	E2 through E5 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
E3	USP4,505,035	
E4	USP4,506,937	
E5	USP4,510,553	
E6	USP4,511,207	E6 does not disclose, at least, an optical module

		comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and a photo diode module are electrically connected proximate to a first edge of the circuit board.
E7	USP4,514,586	E7 through E14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
E8	USP4,516,204	
E9	USP4,519,670	
E10	USP4,519,672	
E11	USP4,519,673	
E12	USP4,522,463	
E13	USP4,526,438	
E14	USP4,526,986	
E15	USP4,527,286	E15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
E16	USP4,529,266	E16 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
F1	USP4,530,566	F1 through F3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
F2	USP4,531,810	
F3	USP4,533,208	
F4	USP4,533,209	F4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
F5	USP4,534,616	F5 through F8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
F6	USP4,534,617	
F7	USP4,535,233	
F8	USP4,537,468	
F9	USP4,539,476	F9 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
F10	USP4,540,237	F10 through F16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode
F11	USP4,540,246	
F12	USP4,541,036	

F13	USP4,541,685	optical signal and transmit the laser diode optical signal.
F14	USP4,542,076	
F15	USP4,544,231	
F16	USP4,544,233	

Ref	Title	Distinction between reference(s) and claim(s)
G1	USP4,544,234	G1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
G2	USP4,545,074	G2 and G3 do not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and a photo diode module are electrically connected proximate to a first edge of the circuit board.
G3	USP4,545,077	
G4	USP4,545,642	G4 through G8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
G5	USP4,545,643	
G6	USP4,545,644	
G7	USP4,545,645	
G8	USP4,548,465	
G9	USP4,548,466	G9 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
G10	USP4,548,467	G10 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
G11	USP4,549,782	G11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
G12	USP4,549,783	G12 through G14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
G13	USP4,550,975	
G14	USP4,553,811	
G15	USP4,553,813	G15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

G16	USP4,553,814	G16 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
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Ref	Title	Distinction between reference(s) and claim(s)
H1	USP4,556,279	H1 through H10 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
H2	USP4,556,281	
H3	USP4,556,282	
H4	USP4,557,551	
H5	USP4,560,234	
H6	USP4,563,057	
H7	USP4,566,753	
H8	USP4,568,145	
H9	USP4,569,569	
H10	USP4,573,760	
H11	USP4,580,295	H11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
H12	USP4,580,872	H12 through H16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
H13	USP4,588,256	
H14	USP4,589,728	
H15	USP4,597,631	
H16	USP4,614,836	

Ref	Title	Distinction between reference(s) and claim(s)
I1	USP4,629,270	I1 and I2 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
I2	USP4,634,239	
I3	USP4,641,371	I3 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and a photo diode module are electrically connected proximate to a first edge of the circuit board.
I4	USP4,647,148	I4 through I16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
I5	USP4,652,976	
I6	USP4,663,240	
I7	USP4,663,603	
I8	USP4,678,264	

I9	USP4,679,883	
I10	USP4,695,106	
I11	USP4,697,864	
I12	USP4,708,433	
I13	USP4,715,675	
I14	USP4,720,630	
I15	USP4,722,584	
I16	USP4,736,100	

Ref	Title	Distinction between reference(s) and claim(s)
J1	USP4,756,593	J1 through J15 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
J2	USP4,762,388	
J3	USP4,767,179	
J4	USP4,772,931	
J5	USP4,779,952	
J6	USP4,789,218	
J7	USP4,798,430	
J8	USP4,798,440	
J9	USP4,807,006	
J10	USP4,807,955	
J11	USP4,808,115	
J12	USP4,811,165	
J13	USP4,812,133	
J14	USP4,821,145	
J15	USP4,823,235	
J16	USP4,838,630	J16 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
K1	USP4,840,451	K1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
K2	USP4,844,581	K2 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and a photo diode module are electrically connected proximate to a first edge of the circuit board.
K3	USP4,847,711	K3 through K9 do not disclose, at least, an optical



K4	USP4,847,771	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
K5	USP4,849,944	
K6	USP4,857,002	
K7	USP4,862,327	
K8	USP4,872,212	
K9	USP4,872,736	
K10	USP4,881,789	K10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
K11	USP4,884,336	K11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
K12	USP4,897,711	K12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
K13	USP4,906,197	K13 through K16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
K14	USP4,927,225	
K15	USP4,944,568	
K16	USP4,945,448	

Ref	Title	Distinction between reference(s) and claim(s)
L1	USP4,953,929	L1 through L4 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
L2	USP4,955,817	
L3	USP4,963,104	
L4	USP4,967,312	
L5	USP4,977,329	L5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
L6	USP4,979,793	L6 and L7 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
L7	USP4,979,794	
L8	USP4,986,625	L8 and L9 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
L9	USP4,989,934	
L10	USP4,990,104	L10 through L16 do not disclose, at least, an optical module comprising a laser diode module to convert
L11	USP4,991,062	

L12	USP5,002,495	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
L13	USP5,004,434	
L14	USP5,006,286	
L15	USP5,011,425	
L16	USP5,029,254	

Ref	Title	Distinction between reference(s) and claim(s)
M1	USP5,035,482	M1 through M4 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
M2	USP5,035,641	
M3	USP5,040,993	
M4	USP5,041,025	
M5	USP5,043,775	M5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
M6	USP5,044,982	M6 through M14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
M7	USP5,045,635	
M8	USP5,045,971	
M9	USP5,046,955	
M10	USP5,060,373	
M11	USP5,071,219	
M12	USP5,076,656	
M13	USP5,076,688	
M14	USP5,082,344	
M15	USP5,084,802	M15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
M16	USP5,086,422	M16 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
N1	USP5,091,991	N1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
N2	USP5,093,879	N2 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
N3	USP5,094,623	N3 through N8 do not disclose, at least, an optical

N4	USP5,101,463	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
N5	USP5,104,243	
N6	USP5,107,404	
N7	USP5,108,294	
N8	USP5,109,453	
N9	USP5,113,467	N9 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
N10	USP5,116,239	N10 through N14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
N11	USP5,117,476	
N12	USP5,118,362	
N13	USP5,118,904	
N14	USP5,120,578	
N15	USP5,122,893	N15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
N16	USP5,124,885	N16 and N17 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
N17	USP5,125,849	
N18	USP5,127,071	N18 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
N19	USP5,132,871	N19 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
O1	USP5,134,677	O1 through O3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
O2	USP5,134,679	
O3	USP5,136,063	
O4	USP5,136,152	O4 and O5 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
O5	USP5,136,603	
O6	USP5,138,537	O6 through O8 do not disclose, at least, an optical module comprising a laser diode module to convert
O7	USP5,138,678	

O8	USP5,140,663	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
O9	USP5,155,786	O9 and O10 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
O10	USP5,157,769	
O11	USP5,167,139	O11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
O12	USP5,168,537	O12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
O13	USP5,170,146	O13 through O16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
O14	USP5,171,167	
O15	USP5,173,059	
O16	USP5,183,404	
O17	USP5,183,405	

Ref	Title	Distinction between reference(s) and claim(s)
P1	USP5,195,911	P1 through P4 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
P2	USP5,202,536	
P3	USP5,207,597	
P4	USP5,212,752	
P5	USP5,212,754	P5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
P6	USP5,218,519	P6 through P11 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
P7	USP5,225,760	
P8	USP5,233,676	
P9	USP5,233,674	
P10	USP5,234,353	
P11	USP5,238,426	
P12	USP5,241,614	P12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
P13	USP5,247,532	P13 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode

		module and a photo diode module are electrically connected proximate to a first edge of the circuit board.
P14	USP5,259,052	P14 through P16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
P15	USP5,259,054	
P16	USP5,262,923	
P17	USP5,271,079	P17 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
Q1	USP5,274,729	Q1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
Q2	USP5,285,466	Q2 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
Q3	USP5,285,511	Q3 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
Q4	USP5,285,512	Q4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
Q5	USP5,286,207	Q5 through Q16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
Q6	USP5,286,247	
Q7	USP5,288,247	
Q8	USP5,289,347	
Q9	USP5,296,813	
Q10	USP5,299,089	
Q11	USP5,304,069	
Q12	USP5,305,182	
Q13	USP5,311,408	
Q14	USP5,315,679	
Q15	USP5,317,663	
Q16	USP5,321,819	

Ref	Title	Distinction between reference(s) and claim(s)
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R1	USP5,329,604	R1 through R3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
R2	USP5,333,221	
R3	USP5,333,225	
R4	USP5,337,391	R4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
R5	USP5,337,396	R5 and R6 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
R6	USP5,340,340	
R7	USP5,345,524	R7 and R8 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
R8	USP5,345,530	
R9	USP5,353,364	R9 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and a photo diode module are electrically connected proximate to a first edge of the circuit board.
R10	USP5,353,634	R10 through R12 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
R11	USP5,356,300	
R12	USP5,357,402	
R13	USP5,361,244	R13 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
R14	USP5,361,318	R14 through R16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
R15	USP5,366,664	
R16	USP5,372,515	

Ref	Title	Distinction between reference(s) and claim(s)
S1	USP5,375,040	S1 through S9 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical
S2	USP5,383,793	
S3	USP5,388,995	
S4	USP5,390,268	

S5	USP5,393,249	signal.
S6	USP5,397,242	
S7	USP5,398,154	
S8	USP5,398,295	
S9	USP5,408,384	
S10	USP5,414,787	S10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
S11	USP5,416,668	S11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
S12	USP5,416,870	S12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
S13	USP5,416,872	S13 through S16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
S14	USP5,419,717	
S15	USP5,424,573	
S16	USP5,428,703	

Ref	Title	Distinction between reference(s) and claim(s)
T1	USP5,428,704	T1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
T2	USP5,434,747	T2 and T3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
T3	USP5,443,390	
T4	USP5,446,814	T4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
T5	USP5,452,387	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T6	USP5,454,080	T6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

T7	USP5,455,703	T7 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
T8	USP5,463,532	T8 and T9 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
T9	USP5,469,332	
T10	USP5,470,257	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T11	USP5,470,259	
T12	USP5,475,734	T12 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
T13	USP5,477,418	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T14	USP5,478,253	
T15	USP5,478,259	T15 and T16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
T16	USP5,478,260	

Ref	Title	Distinction between reference(s) and claim(s)
U1	USP5,481,634	U1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
U2	USP5,482,658	U2 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
U3	USP5,487,678	U3 and U4 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
U4	USP5,491,613	
U5	USP5,491,712	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.



U6	USP5,494,747	U6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
U7	USP5,499,311	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U8	USP5,499,312	U8 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
U9	USP5,504,657	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U10	USP5,506,921	U10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
U11	USP5,506,922	U11 through U14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
U12	USP5,507,668	
U13	USP5,526,235	
U14	USP5,527,991	
U15	USP5,534,662	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U16	USP5,535,296	

Ref	Title	Distinction between reference(s) and claim(s)
V1	USP5,535,364	V1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
V2	USP5,545,845	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V3	USP5,546,281	
V4	USP5,547,385	
V5	USP5,548,641	V5 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
V6	USP5,548,677	This reference does not qualify as prior art. Applicants have claimed priority to Japanese

		Application No. 06-086691, filed on April 25, 1994, in Japan.
V7	USP5,554,031	V7 through V9 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
V8	USP5,554,037	
V9	USP5,567,167	
V10	USP5,577,064	V10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
V11	USP5,580,269	V11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
V12	USP5,588,850	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V13	USP5,598,319	V13 and V14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
V14	USP5,599,595	
V15	USP5,600,470	V15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
V16	USP5,613,860	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
W1	USP5,629,919	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
W2	USP5,631,998	
W3	USP5,653,596	
W4	USP5,659,459	W4 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
W5	USP5,675,428	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25,
W6	USP5,687,267	
W7	USP5,717,533	

W8	USP5,724,729	1994, in Japan.
W9	USP5,726,864	
W10	USP5,734,558	
W11	USP5,736,782	
W12	USP5,747,735	
W13	USP5,767,999	
W14	USP5,779,504	
W15	USP5,797,771	
W16	USP5,836,774	

Ref	Title	Distinction between reference(s) and claim(s)
X1	USP5,864,468	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
X2	USP5,879,173	
X3	DE.4239124 A1	X3 through X6 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
X4	EP 0 232792 A1	
X5	EP.0 228 278	
X6	EP.0 305112 A2	
X7	EP.0 314 651 A2	X7 and X8 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
X8	EP.0 413 489 A2	
X9	EP.0 437 161 A2	X9 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
X10	EP.0 456 298 B1	X10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
X11	EP.0 530 791 A2	X11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
X12	EP.0 535 473 A1	X12 through X14 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
X13	EP.0 588 014 A2	
X14	EP.0 600 645 A1	
X15	EP.0 613 032 A2	X15 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode

		module and a photo diode module are electrically connected proximate to a first edge of the circuit board.
X16	EP.0 652 696 A1	X16 through X18 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
X17	EP.0 656 696 A1	
X18	EP.0 662 259 B1	
X19	EP.442 608 A2	X19 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
X20	WO 94/12900	X20 and X21 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
X21	JP.1-237783	

Ref	Title	Distinction between reference(s) and claim(s)
Y1	JP.2-151084	Y1 through Y4 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
Y2	JP.2-181710	
Y3	JP.2-278212	
Y4	JP.2-87837	
Y5	JP.3-20458	Y5 through Y7 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
Y6	JP.3-94869	
Y7	JP.4-109593	
Y8	JP.4-122905	Y8 through Y10 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
Y9	JP.4-165312	
Y10	JP.4-211208	
Y11	JP.4-221207	Y11 through Y13 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
Y12	JP.4-229962	
Y13	JP.4-230978	
Y14	JP.4-234715	Y14 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
Y15	JP.4-270305	Y15 through Y18 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser
Y16	JP.4-50901	
Y17	JP.4-87809	

Y18	JP.5-052802	diode optical signal and transmit the laser diode optical signal.
Y19	JP.5-134147	Y19 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
Z1	JP.5-152607	Z1 and Z2 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
Z2	JP.5-188250	
Z3	JP.5-211379	Z3 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
Z4	JP.5-218581	Z4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
Z5	JP.5-290913	Z5 through Z8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
Z6	JP.5-70955	
Z7	JP.61-158046	
Z8	JP.61-188385	
Z9	JP.63-009325	Z9 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and a photo diode module are electrically connected proximate to a first edge of the circuit board.
Z10	JP.63-16496	Z10 through Z19 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
Z11	JP.63-65967	
Z12	JP.63-65978	
Z13	JP.63-82998	
Z14	U-3-20458	
Z15	U-3-94869	
Z16	U-4-87809	
Z17	U-5-052802	
Z18	U-5-70955	
Z19	U-61-158046	

Ref	Title	Distinction between reference(s) and claim(s)
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AA1	U-61-188385	AA1 through AA5 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
AA2	U-63-16496	
AA3	U-63-65967	
AA4	U-63-65978	
AA5	U-63-82998	

Ref	Title	Distinction between reference(s) and claim(s)
BB1	AT&T Microelectronics, "1408-Type ODL Transceiver" Feb. 1994 preliminary data sheet.p.2-10	BB1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
BB2	Ronald LSoderstrom et al., "An optical Date Link using a CD laser", SPIE Vol.1577 High Speed Fiber Networks and Channels, pp.163-173, 1991	BB2 through BB4 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
BB3	BCP, Inc. "Gigabits Over Multimode Optical Fiber" no date	
BB4	Ronald L.Soderstrom et al., "CD laser optical Date Links for Workstation and Midrange Computers", IEEE p.505-509, 1993.	
BB5	FDDI Low-Cost Fiber Physical Layer Medium Dependent (LCF-PMD) Common Receiver Footprint, no date.	BB5 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and a photo diode module are electrically connected proximate to a first edge of the circuit board.
BB6	HP Module HFBR-5103, FDDI Data Sheet, <a href="http://www.hp.com/HP-COMP/fiber/hfbr5103.html">http://www.hp.com/HP-COMP/fiber/hfbr5103.html</a> , Jun. 11, 1998	BB6 and BB7 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
BB7	IBM Technical Disclosure Bulletin "Optical Link Card Guide/Retention System", <a href="http://www.patents.ibm.com/tdbs/tdb?&amp;order=93A+60964">www.patents.ibm.com/tdbs/tdb?&amp;order=93A+60964</a> , April 1993	
BB8	IBM, "A Proposal for a New High Performance... "Optoelectronics Enterprise Oct.1992 ANSI Meeting, Oct. 13, 1992	BB8 and BB9 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
BB9	IBM, et al, "GLM Family", FCSI-301-Ren Sun, GLM, ,,,,,, FCSI-301-Rev1.0, Feb. 16, 1994.	
BB10	Methode Electronics, Inc., "DM 1063-DBLM9 Copper Gigabit Link Module" data sheet.(no date)	BB10 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
BB11	"Raylan Joins Low-Wavelength Push -850 nm Transceiver", Electronic Engineering Times, Aug. 1993.	BB11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
CC1	Sumitomo Electric Fiber Optics Corp. "Transceiver Manufacturers to Support Common Footprint for Desktop FDDI Applications," June 23, 1992.	CC1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser

		diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
CC2	Sun Microsystems computer Co. et al., Gigabit Interface Converter (GBIC), Rev 4.4, Dec. 1, 1997	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
CC3	Siemens, "Who provides Low-Cost Transceivers for all Standards?" no date.	CC3 through CC5 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
CC4	AMP "PC Board Connectors", Product Guide 82759, pp. 7104-7108, Catalog E2750 issued Jun. 1991	
CC5	AMP Inc. "Lytel Molded-Optronic SC Duplex Transceiver" Catalog 65922, Dec. 1993.	
CC6	AMPHENOL Engineering News vol. 7 No. 6., pp241, 264-65, Nov. 1994	CC6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
CC7	Baldwin and Kellerman, "Fiber Optic Module Interface Attachment" Research disclosure, Kenneth Mason Publications Ltd., England, Apr. 1991.	CC7 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
CC8	Block and Gaio "Optical Link Card guide/Retention Sys" RESEARCH DISCLOSURE Kenneth Mason Publications Ltd., England, Apr. 1993.	CC8 and CC9 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
CC9	Cinch Hinge Connectors Catalog CM-16, Jul. 1963.	
CC10	Martin H. Weik, "Communication Standard Dictionary" p.454. definition of LED, Van Nostrand Reinhold Co.	CC10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
CC11	Edward R. Salmon, Encapsulation of Electronic Devices and Components, Marcel Dekker Inc., New York, 1987	CC11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
DD1	Dieter Gwinner, Conductive Coatings: Vacuum Evaporated Aluminum for Selective Shielding of Plastic Housings, no date.	DD1 through DD3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
DD2	HEADS Up--Sumitomo Electric Lightwave joins Other in Announcement, May 11, 1995	
DD3	Robert C. Herron, High Density Input/Output Connector Systems, 3M Electronic Products Divisions, 1990	
DD4	Shortwave Opto Assembly, IBM OptoElectronic Enterprises; IBM/OEE Market Survey Only, Rev. 1, Jan. 6, 1993	DD4 and DD5 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
DD5	"Minimizing Electrostatic Discharge Damage to a Cartridge", IBM Technical Disclosure Bulletin, vol. 29 No. 10, Mar., 1987	
DD6	Japanese Standards Association "F04 Type Connectors for Optical Fiber Cords JIS C 5973" Japanese Standards Association, 1990.	DD6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser

		diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
DD7	Ronald L.Soderstrom et al.,A Miniaturized Fiber Optic Laser Receptacle Using a Compact Disk(CD)··· FOC/LAN' 87&MFOC-WEST,pp.383-385,no date.	DD7 through DD9 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
DD8	"Transceiver Module Assembly", IBM Technical Disclosure Bulletin,Oct.1979,https://www.delphion.com/tbds/tdb?o=79A+06370,last visited Mar.3,2005.	
DD9	Ronald L.Soderstrom et al.,Optical Components and Electronic Packaging for High Performance Optical Data Links,THE RESEARCH INVESTMENT,p.19-28(no date).	
DD10	Thomas & Betts INFO-LAN Modem 1998	DD10 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and a photo diode module are electrically connected proximate to a first edge of the circuit board.
DD11	"Active component manufacturers lower the cost of fiber to the desktop",Lightwave,Feb.1994 pp.58,67.	DD11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
EE1	Fibre Distributed Date Interface(FDDI)-Token Ring Low-Cost Fibre Physical Layer Medium Dependent (LCF-PMD),American National Standards Institute,1996.	EE1 through EE11 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
EE2	Communications Standard Dictionary; p.454,definition of inhomogeneous fiber,Van Nostrand Reinhold Publishing,1983	
EE3	"Transmitter/receiver assembly simplifies use of fibre optics", Design Engineering,p.19,Button Press,Ltd.,April 1980.	
EE4	Ronald L.Soderstrom et al., "CD laser as a fiber optic source for computer data links",Fiber Optic Datacom and Computer Networks,SPIE-The International Society for Optical Engineerdings,Vol.1577,pp.174-181,1988	
EE5	David A.Knodel et al., "Open Fibre Control,a laser safety interlock technique",High-Speed Fiber Networks and Channels,SPIE-The International Society for Optical Engineering Proceedings,Vol.991,pp.179-182,1992	
EE6	"IBM Technical Disclosure Bulletin, Electrostatic Dissipative Enclosed Connector", Vol.34,No.7B,Dec.1991	
EE7	"High Reliability SW Laser For Optical Data Links", LEOS '93 Conference Proceedings, IEEE Lasers and Electro-Optics Society 1993 Annual Meeting;	
EE8	Minimizing Electrostatic Discharge to a Cartridge,IBM Technical Disclosure Bulletin,March 1987,https://www.delphion.com/tdb?o=87A%2060509 ,last visited Mar.8,2005.	



EE9	K.P.Jackson et al., "High-Density, Array, Optical Interconnects for Multi-Chip Module Conference MCMC-92 Proceedings, IEEE Computer Society Press.	
EE10	TDB: Stackable Circuit Card Packaging within a Logic Cage, IBM Technical Disclosure Bulletin, Dec. 1992, <a href="https://www.delphion.com/tbds/tdb?o=92A%2063485">https://www.delphion.com/tbds/tdb?o=92A%2063485</a> , last visited Mar. 8, 2005	
EE11	Jeff Hechi, The Laser Guidebook, 2nd ed., McGraw Hill, Inc., 1992	

Claim Chart for Claims 180-181 of 10/766,488

Ref	Title	Distinction between reference(s) and claim(s)
A1	Re.32,502	A1 through A12 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
A2	USP2,899,669	
A3	USP3,264,601	
A4	USP3,332,860	
A5	USP3,474,380	
A6	USP3,497,866	
A7	USP3,523,269	
A8	USP3,670,290	
A9	USP3,673,545	
A10	USP3,706,869	
A11	USP3,737,729	
A12	USP3,790,923	
A13	USP3,792,284	A13 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
A14	USP3,805,116	A14 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
A15	USP3,809,908	A15 and A16 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
A16	USP3,976,877	

Ref	Title	Distinction between reference(s) and claim(s)
B1	USP3,990,761	B1 through B3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
B2	USP4,047,242	
B3	USP4,156,903	
B4	USP4,161,650	B4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
B5	USP4,167,303	B5 through B7 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
B6	USP4,176,897	
B7	USP4,217,019	
B8	USP4,217,488	B8 does not disclose, at least, an optical module comprising a laser diode electrical signal converter

		to convert serial data, received from a motherboard, into a laser diode electrical signal.
B9	USP4,226,491	B9 and B10 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
B10	USP4,234,968	
B11	USP4,249,266	B11 through B13 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
B12	USP4,252,402	
B13	USP4,257,124	
B14	USP4,268,756	B14 and B15 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
B15	USP4,273,413	
B16	USP4,276,656	B16 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
C1	USP4,294,682	C1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
C2	USP4,295,181	C2 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
C3	USP4,301,543	C3 and C4 do not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and a photo diode module are electrically connected.
C4	USP4,330,870	
C5	USP4,345,808	C5 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
C6	USP4,347,655	C6 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode

		module and a photo diode module are electrically connected.
C7	USP4,357,606	C7 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
C8	USP4,360,248	C8 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
C9	USP4,366,565	C9 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and a photo diode module are electrically connected.
C10	USP4,369,494	C10 through C15 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
C11	USP4,380,360	
C12	USP4,388,671	
C13	USP4,393,516	
C14	USP4,398,073	
C15	USP4,398,780	
C16	USP4,399,563	C16 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and a photo diode module are electrically connected.

Ref	Title	Distinction between reference(s) and claim(s)
D1	USP4,408,273	D1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
D2	USP4,422,088	D2 through D4 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
D3	USP4,427,879	
D4	USP4,430,699	
D5	USP4,434,537	D5 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
D6	USP4,437,190	D6 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard,

		into a laser diode electrical signal.
D7	USP4,439,006	D7 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and a photo diode module are electrically connected.
D8	USP4,446,515	D8 and D9 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
D9	USP4,449,244	
D10	USP4,449,784	D10 through D13 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
D11	USP4,453,903	
D12	USP4,459,658	
D13	USP4,461,537	
D14	USP4,470,154	D14 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
D15	USP4,486,059	D15 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
D16	USP4,493,113	D16 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
E1	USP4,501,021	E1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
E2	USP4,502,130	E2 through E5 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
E3	USP4,505,035	
E4	USP4,506,937	
E5	USP4,510,553	
E6	USP4,511,207	E6 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and a photo diode module are electrically connected.

E7	USP4,514,586	E7 through E14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
E8	USP4,516,204	
E9	USP4,519,670	
E10	USP4,519,672	
E11	USP4,519,673	
E12	USP4,522,463	
E13	USP4,526,438	
E14	USP4,526,986	
E15	USP4,527,286	E15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
E16	USP4,529,266	E16 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
F1	USP4,530,566	F1 through F3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
F2	USP4,531,810	
F3	USP4,533,208	
F4	USP4,533,209	F4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
F5	USP4,534,616	F5 through F8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
F6	USP45,34,617	
F7	USP4,535,233	
F8	USP4,537,468	
F9	USP4,539,476	F9 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
F10	USP4,540,237	F10 through F16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
F11	USP4,540,246	
F12	USP4,541,036	
F13	USP4,541,685	
F14	USP4,542,076	
F15	USP4,544,231	
F16	USP4,544,233	

Ref	Title	Distinction between reference(s) and claim(s)
G1	USP4,544,234	G1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
G2	USP4,545,074	G2 and G3 do not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and a photo diode module are electrically connected.
G3	USP4,545,077	
G4	USP4,545,642	G4 through G8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
G5	USP4,545,643	
G6	USP4,545,644	
G7	USP4,545,645	
G8	USP4,548,465	
G9	USP4,548,466	G9 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
G10	USP4,548,467	G10 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
G11	USP4,549,782	G11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
G12	USP4,549,783	G12 through G14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
G13	USP4,550,975	
G14	USP4,553,811	
G15	USP4,553,813	G15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
G16	USP4,553,814	G16 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
H1	USP4,556,279	H1 through H10 do not disclose, at least, an optical module comprising a laser diode module to convert
H2	USP4,556,281	

H3	USP4,556,282	a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
H4	USP4,557,551	
H5	USP4,560,234	
H6	USP4,563,057	
H7	USP4,566,753	
H8	USP4,568,145	
H9	USP4,569,569	
H10	USP4,573,760	
H11	USP4,580,295	H11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
H12	USP4,580,872	H12 through H16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
H13	USP4,588,256	
H14	USP4,589,728	
H15	USP4,597,631	
H16	USP4,614,836	

Ref	Title	Distinction between reference(s) and claim(s)
I1	USP4,629,270	I1 and I2 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
I2	USP4,634,239	
I3	USP4,641,371	I3 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and a photo diode module are electrically connected.
I4	USP4,647,148	I4 through I16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
I5	USP4,652,976	
I6	USP4,663,240	
I7	USP4,663,603	
I8	USP4,678,264	
I9	USP4,679,883	
I10	USP4,695,106	
I11	USP4,697,864	
I12	USP4,708,433	
I13	USP4,715,675	
I14	USP4,720,630	
I15	USP4,722,584	
I16	USP4,736,100	



Ref	Title	Distinction between reference(s) and claim(s)
J1	USP4,756,593	J1 through J15 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
J2	USP4,762,388	
J3	USP4,767,179	
J4	USP4,772,931	
J5	USP4,779,952	
J6	USP4,789,218	
J7	USP4,798,430	
J8	USP4,798,440	
J9	USP4,807,006	
J10	USP4,807,955	
J11	USP4,808,115	
J12	USP4,811,165	
J13	USP4,812,133	
J14	USP4,821,145	
J15	USP4,823,235	
J16	USP4,838,630	J16 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
K1	USP4,840,451	K1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
K2	USP4,844,581	K2 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and a photo diode module are electrically connected.
K3	USP4,847,711	K3 through K9 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
K4	USP4,847,771	
K5	USP4,849,944	
K6	USP4,857,002	
K7	USP4,862,327	
K8	USP4,872,212	
K9	USP4,872,736	
K10	USP4,881,789	K10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
K11	USP4,884,336	K11 does not disclose, at least, an optical module

		comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
K12	USP4,897,711	K12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
K13	USP4,906,197	K13 through K16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
K14	USP4,927,225	
K15	USP4,944,568	
K16	USP4,945,448	

Ref	Title	Distinction between reference(s) and claim(s)
L1	USP4,953,929	L1 through L4 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
L2	USP4,955,817	
L3	USP4,963,104	
L4	USP4,967,312	
L5	USP4,977,329	L5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
L6	USP4,979,793	L6 and L7 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
L7	USP4,979,794	
L8	USP4,986,625	L8 and L9 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
L9	USP4,989,934	
L10	USP4,990,104	L10 through L16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
L11	USP4,991,062	
L12	USP5,002,495	
L13	USP5,004,434	
L14	USP5,006,286	
L15	USP5,011,425	
L16	USP5,029,254	

Ref	Title	Distinction between reference(s) and claim(s)
M1	USP5,035,482	M1 through M4 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode
M2	USP5,035,641	
M3	USP5,040,993	

M4	USP5,041,025	optical signal and transmit the laser diode optical signal.
M5	USP5,043,775	M5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
M6	USP5,044,982	M6 through M14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
M7	USP5,045,635	
M8	USP5,045,971	
M9	USP5,046,955	
M10	USP5,060,373	
M11	USP5,071,219	
M12	USP5,076,656	
M13	USP5,076,688	
M14	USP5,082,344	
M15	USP5,084,802	M15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
M16	USP5,086,422	M16 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
N1	USP5,091,991	N1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
N2	USP5,093,879	N2 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
N3	USP5,094,623	N3 through N8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
N4	USP5,101,463	
N5	USP5,104,243	
N6	USP5,107,404	
N7	USP5,108,294	
N8	USP5,109,453	
N9	USP5,113,467	N9 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
N10	USP5,116,239	N10 through N14 do not disclose, at least, an

N11	USP5,117,476	optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
N12	USP5,118,362	
N13	USP5,118,904	
N14	USP5,120,578	
N15	USP5,122,893	N15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
N16	USP5,124,885	N16 and N17 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
N17	USP5,125,849	
N18	USP5,127,071	N18 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
N19	USP5,132,871	N19 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
O1	USP5,134,677	O1 through O3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
O2	USP5,134,679	
O3	USP5,136,063	
O4	USP5,136,152	O4 and O5 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
O5	USP5,136,603	
O6	USP5,138,537	O6 through O8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
O7	USP5,138,678	
O8	USP5,140,663	
O9	USP5,155,786	O9 and O10 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
O10	USP5,157,769	
O11	USP5,167,139	O11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
O12	USP5,168,537	O12 does not disclose, at least, an optical module

		comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
O13	USP5,170,146	O13 through O17 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
O14	USP5,171,167	
O15	USP5,173,059	
O16	USP5,183,404	
O17	USP5,183,405	

Ref	Title	Distinction between reference(s) and claim(s)
P1	USP5,195,911	P1 through P4 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
P2	USP5,202,536	
P3	USP5,207,597	
P4	USP5,212,752	
P5	USP5,212,754	P5 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
P6	USP5,218,519	P6 through P11 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
P7	USP5,225,760	
P8	USP5,233,676	
P9	USP5,233,674	
P10	USP5,234,353	
P11	USP5,238,426	
P12	USP5,241,614	P12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
P13	USP5,247,532	P13 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and a photo diode module are electrically connected.
P14	USP5,259,052	P14 through P16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
P15	USP5,259,054	
P16	USP5,262,923	
P17	USP5,271,079	P17 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
Q1	USP5,274,729	Q1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
Q2	USP5,285,466	Q2 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
Q3	USP5,285,511	Q3 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
Q4	USP5,285,512	Q4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
Q5	USP5,286,207	Q5 through Q16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
Q6	USP5,286,247	
Q7	USP5,288,247	
Q8	USP5,289,347	
Q9	USP5,296,813	
Q10	USP5,299,089	
Q11	USP5,304,069	
Q12	USP5,305,182	
Q13	USP5,311,408	
Q14	USP5,315,679	
Q15	USP5,317,663	
Q16	USP5,321,819	

Ref	Title	Distinction between reference(s) and claim(s)
R1	USP5,329,604	R1 through R3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
R2	USP5,333,221	
R3	USP5,333,225	
R4	USP5,337,391	R4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
R5	USP5,337,396	R5 and R6 do not disclose, at least, an optical

R6	USP5,340,340	module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
R7	USP5,345,524	R7 and R8 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
R8	USP5,345,530	
R9	USP5,353,364	R9 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and a photo diode module are electrically connected.
R10	USP5,353,634	R10 through R12 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
R11	USP5,356,300	
R12	USP5,357,402	
R13	USP5,361,244	R13 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
R14	USP5,361,318	R14 through R16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
R15	USP5,366,664	
R16	USP5,372,515	

Ref	Title	Distinction between reference(s) and claim(s)
S1	USP5,375,040	S1 through S9 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
S2	USP5,383,793	
S3	USP5,388,995	
S4	USP5,390,268	
S5	USP5,393,249	
S6	USP5,397,242	
S7	USP5,398,154	
S8	USP5,398,295	
S9	USP5,408,384	
S10	USP5,414,787	S10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
S11	USP5,416,668	S11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser

		diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
S12	USP5,416,870	S12 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
S13	USP5,416,872	S13 through S16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
S14	USP5,419,717	
S15	USP5,424,573	
S16	USP5,428,703	

Ref	Title	Distinction between reference(s) and claim(s)
T1	USP5,428,704	T1 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
T2	USP5,434,747	T2 and T3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
T3	USP5,443,390	
T4	USP5,446,814	T4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
T5	USP5,452,387	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T6	USP5,454,080	T6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
T7	USP5,455,703	T7 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
T8	USP5,463,532	T8 and T9 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
T9	USP5,469,332	
T10	USP5,470,257	These references do not qualify as prior art.



T11	USP5,470,259	Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T12	USP5,475,734	T12 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
T13	USP5,477,418	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T14	USP5,478,253	
T15	USP5,478,259	T15 and T16 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
T16	USP5,478,260	

Ref	Title	Distinction between reference(s) and claim(s)
U1	USP5,481,634	U1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
U2	USP5,482,658	U2 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
U3	USP5,487,678	U3 and U4 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
U4	USP5,491,613	
U5	USP5,491,712	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U6	USP5,494,747	U6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
U7	USP5,499,311	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U8	USP5,499,312	U8 does not disclose, at least, an optical module comprising a laser diode electrical signal converter

		to convert serial data, received from a motherboard, into a laser diode electrical signal.
U9	USP5,504,657	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U10	USP5,506,921	U10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
U11	USP5,506,922	U11 through U14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
U12	USP5,507,668	
U13	USP5,526,235	
U14	USP5,527,991	
U15	USP5,534,662	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U16	USP5,535,296	

Ref	Title	Distinction between reference(s) and claim(s)
V1	USP5,535,364	V1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
V2	USP5,545,845	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V3	USP5,546,281	
V4	USP5,547,385	
V5	USP5,548,641	V5 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
V6	USP5,548,677	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V7	USP5,554,031	V7 through V9 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
V8	USP5,554,037	
V9	USP5,567,167	
V10	USP5,577,064	V10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a

		motherboard, into a laser diode electrical signal.
V11	USP5,580,269	V11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
V12	USP5,588,850	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V13	USP5,598,319	V13 and V14 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
V14	USP5,599,595	
V15	USP5,600,470	V15 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
V16	USP5,613,860	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
W1	USP5,629,919	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
W2	USP5,631,998	
W3	USP5,653,596	
W4	USP5,659,459	W4 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
W5	USP5,675,428	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
W6	USP5,687,267	
W7	USP5,717,533	
W8	USP5,724,729	
W9	USP5,726,864	
W10	USP5,734,558	
W11	USP5,736,782	
W12	USP5,747,735	
W13	USP5,767,999	
W14	USP5,779,504	
W15	USP5,797,771	
W16	USP5,836,774	

Ref	Title	Distinction between reference(s) and claim(s)
X1	USP5,864,468	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
X2	USP5,879,173	
X3	DE.4239124 A1	X3 through X6 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
X4	EP 0 232792 A1	
X5	EP.0 228 278	
X6	EP.0 305112 A2	
X7	EP.0 314 651 A2	X7 and X8 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
X8	EP.0 413 489 A2	
X9	EP.0 437 161 A2	X9 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
X10	EP.0 456 298 B1	X10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
X11	EP.0 530 791 A2	X11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
X12	EP.0 535 473 A1	X12 through X14 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
X13	EP.0 588 014 A2	
X14	EP.0 600 645 A1	
X15	EP.0 613 032 A2	X15 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and a photo diode module are electrically connected.
X16	EP.0 652 696 A1	X16 through X18 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
X17	EP.0 656 696 A1	
X18	EP.0 662 259 B1	
X19	EP.442 608 A2	X19 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a

		motherboard, into a laser diode electrical signal.
X20	WO 94/12900	X20 and X21 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
X21	JP.1-237783	

Ref	Title	Distinction between reference(s) and claim(s)
Y1	JP.2-151084	Y1 through Y4 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
Y2	JP.2-181710	
Y3	JP.2-278212	
Y4	JP.2-87837	
Y5	JP.3-20458	Y5 through Y7 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
Y6	JP.3-94869	
Y7	JP.4-109593	
Y8	JP.4-122905	Y8 through Y10 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
Y9	JP.4-165312	
Y10	JP.4-211208	
Y11	JP.4-221207	Y11 through Y13 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
Y12	JP.4-229962	
Y13	JP.4-230978	
Y14	JP.4-234715	Y14 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
Y15	JP.4-270305	Y15 through Y18 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
Y16	JP.4-50901	
Y17	JP.4-87809	
Y18	JP.5-052802	
Y19	JP.5-134147	Y19 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
Z1	JP.5-152607	Z1 and Z2 do not disclose, at least, an optical

Z2	JP.5-188250	module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
Z3	JP.5-211379	Z3 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
Z4	JP.5-218581	Z4 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
Z5	JP.5-290913	Z5 through Z8 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
Z6	JP.5-70955	
Z7	JP.61-158046	
Z8	JP.61-188385	
Z9	JP.63-009325	Z9 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and a photo diode module are electrically connected.
Z10	JP.63-16496	Z10 through Z19 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
Z11	JP.63-65967	
Z12	JP.63-65978	
Z13	JP.63-82998	
Z14	U-3-20458	
Z15	U-3-94869	
Z16	U-4-87809	
Z17	U-5-052802	
Z18	U-5-70955	
Z19	U-61-158046	

Ref	Title	Distinction between reference(s) and claim(s)
AA1	U-61-188385	AA1 through AA5 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
AA2	U-63-16496	
AA3	U-63-65967	
AA4	U-63-65978	
AA5	U-63-82998	

Ref	Title	Distinction between reference(s) and claim(s)
BB1	AT&T Microelectronics, "1408-Type ODL Transceiver"Feb. 1994 preliminary data sheet.p.2-10	BB1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

BB2	Ronald L.Soderstrom et al., "An optical Date Link using a CD laser", SPIE Vol.1577 High Speed Fiber Networks and Channels, pp.163-173, 1991	BB2 through BB4 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
BB3	BCP, Inc. "Gigabits Over Multimode Optical Fiber" no date	
BB4	Ronald L.Soderstrom et al., "CD laser optical Date Links for Workstation and Midrange Computers", IEEE p.505-509, 1993.	
BB5	FDDI Low-Cost Fiber Physiscal Layer Medium Dependent (LCF-PMD) Common Receiver Footprint, no date.	BB5 does not disclose, at least, an optical module comprising a single circuit board on which a serial connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and a photo diode module are electrically connected.
BB6	HP Module HFBR-5103, FDDI Data Sheet, <a href="http://www.hp.com/HP-COMP/fiber/hfbr5103.html">http://www.hp.com/HP-COMP/fiber/hfbr5103.html</a> , Jun. 11, 1998	BB6 and BB7 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
BB7	IBM Technical Disclosure Bulletin "Optical Link Card Guide/Retention System". <a href="http://www.patents.ibm.com/tddb/tdb?&amp;order=93A+60964">www.patents.ibm.com/tddb/tdb?&amp;order=93A+60964</a> , April 1993	
BB8	IBM, "A Proposal for a New High Performance..." "OptopElectronics Enterprise Oct.1992 ANSI Meeting, Oct.13, 1992	BB8 and BB9 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
BB9	IBM, et al, "GLM Family", FCSI-301-Ren Sun, GLM, ,,,,,, FCSI-301-Rev1.0, Feb. 16, 1994.	
BB10	Methode Electronics, Inc., "DM 1063-DBLM9 Copper Gigabit Link Module" data sheet. (no date)	BB10 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
BB11	"Raylan Joins Low-Wavelength Push -850 nm Transceiver", Electronic Engineering Times, Aug. 1993.	BB11 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.

Ref	Title	Distinction between reference(s) and claim(s)
CC1	Sumitomo Electric Fiber Optics Corp. "Transceiver Manufacturers to Support Common Footprint for Desktop FDDI Applications," June 23, 1992.	CC1 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
CC2	Sun Microsystems computer Co. et al., Gigabit Interface Converter (GBIC), Rev 4.4, Dec. 1, 1997	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
CC3	Siemens, "Who provides Low-Cost Transceivers for all Sandards?" no date.	CC3 through CC5 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
CC4	AMP "PC Board Connectors", Product Guide 82759, pp. 7104-7108, Catalog E2750 issued Jun. 1991	
CC5	AMP Inc. "Lytel Molded-Optronic SC Duplex Transceiver" Catalog 65922, Dec. 1993.	
CC6	AMPHENOL Engineering News vol. 7 No. 6., pp241, 264-65, Nov. 1994	CC6 does not disclose, at least, an optical module

		comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
CC7	Baldwin and Kellerman, "Fiber Optic Module Interface Attachment" Research disclosure, Kenneth Mason Publications Ltd., England, Apr. 1991.	CC7 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
CC8	Block and Gaio "Optical Link Card guide/Retention Sys" RESEARCH DISCLOSURE Kenneth Mason Publications Ltd., England, Apr. 1993.	CC8 and CC9 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
CC9	Cinch Hinge Connectors Catalog CM-16, Jul. 1963.	
CC10	Martin H. Weik, "Communication Standard Dictionary" p.454. definition of LED, Van Nostrand Reinhold Co.	CC10 does not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
CC11	Edward R. Salmon, Encapsulation of Electronic Devices and Components, Marcel Dekker Inc., New York, 1987	CC11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
DD1	Dieter Gwinner, Conductive Coatings: Vacuum Evaporated Aluminum for Selective Shielding of Plastic Housings, no date.	DD1 through DD3 do not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
DD2	HEADS Up--Sumitomo Electric Lightwave joins Other in Announcement, May 11, 1995	
DD3	Robert C. Herron, High Density Input/Output Connector Systems, 3M Electronic Products Divisions, 1990	
DD4	Shortwave Opto Assembly, IBM OptoElectronic Enterprises; IBM/OEE Market Survey Only, Rev. 1, Jan. 6, 1993	DD4 and DD5 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
DD5	"Minimizing Electrostatic Discharge Damage to a Cartridge", IBM Technical Disclosure Bulletin, vol. 29 No. 10. Mar., 1987	
DD6	Japanese Standards Association " F04 Type Connectors for Optical Fiber Cords JIS C 5973" Japanese Standards Association, 1990.	DD6 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
DD7	Ronald LSoderstrom et al., A Miniaturized Fiber Optic Laser Receptacle Using a Compact Disk(CD) ... FOC/LAN '87&MFOC-WEST, pp.383-385, no date.	DD7 through DD9 do not disclose, at least, an optical module comprising a laser diode electrical signal converter to convert serial data, received from a motherboard, into a laser diode electrical signal.
DD8	"Transceiver Module Assembly", IBM Technical Disclosure Bulletin, Oct. 1979, <a href="https://www.delphion.com/tbds/tdb?o=79A+06370">https://www.delphion.com/tbds/tdb?o=79A+06370</a> , last visited Mar. 3, 2005.	
DD9	Ronald L. Soderstrom et al., Optical Components and Electronic Packaging for High Performance Optical Data Links, THE RESEARCH INVESTMENT, p. 19-28 (no date).	
DD10	Thomas & Betts INFO-LAN Modem 1998	DD10 does not disclose, at least, an optical module comprising a single circuit board on which a serial



		connector and a laser diode electrical signal converter are mounted, and to which a laser diode module and a photo diode module are electrically connected.
DD11	"Active component manufacturers lower the cost of fiber to the desktop", Lightwave, Feb. 1994 pp.58,67.	DD11 does not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.

Ref	Title	Distinction between reference(s) and claim(s)
EE1	Fibre Distributed Date Interface(FDDI)-Token Ring Low-Cost Fibre Physical Layer Medium Dependent (LCF-PMD), American National Standards Institute, 1996.	EE1 through EE11 not disclose, at least, an optical module comprising a laser diode module to convert a laser diode electrical signal into a laser diode optical signal and transmit the laser diode optical signal.
EE2	Communications Standard Dictionary; p.454, definition of inhomogeneous fiber, Van Nostrand Reinhold Publishing, 1983	
EE3	"Transmitter/receiver assembly simplifies use of fibre optics", Design Engineering, p.19, Button Press, Ltd., April 1980.	
EE4	Ronald L. Soderstrom et al., "CD laser as a fiber optic source for computer data links", Fiber Optic Datacom and Computer Networks, SPIE-The International Society for Optical Engineering, Vol. 1577, pp. 174-181, 1988	
EE5	David A. Knodel et al., "Open Fibre Control, a laser safety interlock technique", High-Speed Fiber Networks and Channels, SPIE-The International Society for Optical Engineering Proceedings, Vol. 991, pp. 179-182, 1992	
EE6	"IBM Technical Disclosure Bulletin, Electrostatic Dissipative Enclosed Connector", Vol. 34, No. 7B, Dec. 1991	
EE7	"High Reliability SW Laser For Optical Data Links", LEOS '93 Conference Proceedings, IEEE Lasers and Electro-Optics Society 1993 Annual Meeting;	
EE8	Minimizing Electrostatic Discharge to a Cartridge, IBM Technical Disclosure Bulletin, March 1987, <a href="https://www.delphion.com/tdb?o=87A%2060509">https://www.delphion.com/tdb?o=87A%2060509</a> , last visited Mar. 8, 2005.	
EE9	K.P. Jackson et al., "High-Density, Array, Optical Interconnects for Multi-Chip Module Conference MCMC-92 Proceedings, IEEE Computer Society Press.	
EE10	TDB: Stackable Circuit Card Packaging within a Logic Cage, IBM Technical Disclosure Bulletin, Dec. 1992, <a href="https://www.delphion.com/tbds/tdb?o=92A%2063485">https://www.delphion.com/tbds/tdb?o=92A%2063485</a> , last visited Mar. 8, 2005	
EE11	Jeff Hechi, The Laser Guidebook, 2nd ed., McGraw Hill, Inc., 1992	

Claim Chart for Claims 182-183 of 10/766,488

Ref	Title	Distinction between reference(s) and claim(s)
A1	Re.32,502	A1 through A16 do not disclose, at least, a module cap comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
A2	USP2,899,669	
A3	USP3,264,601	
A4	USP3,332,860	
A5	USP3,474,380	
A6	USP3,497,866	
A7	USP3,523,269	
A8	USP3,670,290	
A9	USP3,673,545	
A10	USP3,706,869	
A11	USP3,737,729	
A12	USP3,790,923	
A13	USP3,792,284	
A14	USP3,805,116	
A15	USP3,809,908	
A16	USP3,976,877	

Ref	Title	Distinction between reference(s) and claim(s)
B1	USP3,990,761	B1 through B16 do not disclose, at least, a module cap comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
B2	USP4,047,242	
B3	USP4,156,903	
B4	USP4,161,650	
B5	USP4,167,303	
B6	USP4,176,897	
B7	USP4,217,019	
B8	USP4,217,488	
B9	USP4,226,491	
B10	USP4,234,968	
B11	USP4,249,266	
B12	USP4,252,402	
B13	USP4,257,124	
B14	USP4,268,756	
B15	USP4,273,413	
B16	USP4,276,656	

Ref	Title	Distinction between reference(s) and claim(s)
C1	USP4,294,682	C1 through C16 do not disclose, at least, a module cap comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively,
C2	USP4,295,181	
C3	USP4,301,543	
C4	USP4,330,870	

C5	USP4,345,808	such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
C6	USP4,347,655	
C7	USP4,357,606	
C8	USP4,360,248	
C9	USP4,366,565	
C10	USP4,369,494	
C11	USP4,380,360	
C12	USP4,388,671	
C13	USP4,393,516	
C14	USP4,398,073	
C15	USP4,398,780	
C16	USP4,399,563	

Ref	Title	Distinction between reference(s) and claim(s)
D1	USP4,408,273	D1 through D16 do not disclose, at least, a module cap comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
D2	USP4,422,088	
D3	USP4,427,879	
D4	USP4,430,699	
D5	USP4,434,537	
D6	USP4,437,190	
D7	USP4,439,006	
D8	USP4,446,515	
D9	USP4,449,244	
D10	USP4,449,784	
D11	USP4,453,903	
D12	USP4,459,658	
D13	USP4,461,537	
D14	USP4,470,154	
D15	USP4,486,059	
D16	USP4,493,113	

Ref	Title	Distinction between reference(s) and claim(s)
E1	USP4,501,021	E1 through E16 do not disclose, at least, a module cap comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
E2	USP4,502,130	
E3	USP4,505,035	
E4	USP4,506,937	
E5	USP4,510,553	
E6	USP4,511,207	
E7	USP4,514,586	
E8	USP4,516,204	
E9	USP4,519,670	
E10	USP4,519,672	
E11	USP4,519,673	

E12	USP4,522,463	
E13	USP4,526,438	
E14	USP4,526,986	
E15	USP4,527,286	
E16	USP4,529,266	

Ref	Title	Distinction between reference(s) and claim(s)
F1	USP4,530,566	F1 through F16 do not disclose, at least, a module cap comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
F2	USP4,531,810	
F3	USP4,533,208	
F4	USP4,533,209	
F5	USP4,534,616	
F6	USP4,534,617	
F7	USP4,535,233	
F8	USP4,537,468	
F9	USP4,539,476	
F10	USP4,540,237	
F11	USP4,540,246	
F12	USP4,541,036	
F13	USP4,541,685	
F14	USP4,542,076	
F15	USP4,544,231	
F16	USP4,544,233	

Ref	Title	Distinction between reference(s) and claim(s)
G1	USP4,544,234	G1 through G16 do not disclose, at least, a module cap comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
G2	USP4,545,074	
G3	USP4,545,077	
G4	USP4,545,642	
G5	USP4,545,643	
G6	USP4,545,644	
G7	USP4,545,645	
G8	USP4,548,465	
G9	USP4,548,466	
G10	USP4,548,467	
G11	USP4,549,782	
G12	USP4,549,783	
G13	USP4,550,975	
G14	USP4,553,811	
G15	USP4,553,813	
G16	USP4,553,814	

Ref	Title	Distinction between reference(s) and claim(s)
H1	USP4,556,279	H1 through H16 do not disclose, at least, a module cap comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
H2	USP4,556,281	
H3	USP4,556,282	
H4	USP4,557,551	
H5	USP4,560,234	
H6	USP4,563,057	
H7	USP4,566,753	
H8	USP4,568,145	
H9	USP4,569,569	
H10	USP4,573,760	
H11	USP4,580,295	
H12	USP4,580,872	
H13	USP4,588,256	
H14	USP4,589,728	
H15	USP4,597,631	
H16	USP4,614,836	

Ref	Title	Distinction between reference(s) and claim(s)
I1	USP4,629,270	I1 through I16 do not disclose, at least, a module cap comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
I2	USP4,634,239	
I3	USP4,641,371	
I4	USP4,647,148	
I5	USP4,652,976	
I6	USP4,663,240	
I7	USP4,663,603	
I8	USP4,678,264	
I9	USP4,679,883	
I10	USP4,695,106	
I11	USP4,697,864	
I12	USP4,708,433	
I13	USP4,715,675	
I14	USP4,720,630	
I15	USP4,722,584	
I16	USP4,736,100	

Ref	Title	Distinction between reference(s) and claim(s)
J1	USP4,756,593	J1 through J16 do not disclose, at least, a module cap comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a
J2	USP4,762,388	
J3	USP4,767,179	
J4	USP4,772,931	
J5	USP4,779,952	
J6	USP4,789,218	

J7	USP4,798,430	projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
J8	USP4,798,440	
J9	USP4,807,006	
J10	USP4,807,955	
J11	USP4,808,115	
J12	USP4,811,165	
J13	USP4,812,133	
J14	USP4,821,145	
J15	USP4,823,235	
J16	USP4,838,630	

Ref	Title	Distinction between reference(s) and claim(s)
K1	USP4,840,451	K1 through K16 do not disclose, at least, a module cap comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
K2	USP4,844,581	
K3	USP4,847,711	
K4	USP4,847,771	
K5	USP4,849,944	
K6	USP4,857,002	
K7	USP4,862,327	
K8	USP4,872,212	
K9	USP4,872,736	
K10	USP4,881,789	
K11	USP4,884,336	
K12	USP4,897,711	
K13	USP4,906,197	
K14	USP4,927,225	
K15	USP4,944,568	
K16	USP4,945,448	

Ref	Title	Distinction between reference(s) and claim(s)
L1	USP4,953,929	L1 through L16 do not disclose, at least, a module cap comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
L2	USP4,955,817	
L3	USP4,963,104	
L4	USP4,967,312	
L5	USP4,977,329	
L6	USP4,979,793	
L7	USP4,979,794	
L8	USP4,986,625	
L9	USP4,989,934	
L10	USP4,990,104	
L11	USP4,991,062	
L12	USP5,002,495	
L13	USP5,004,434	

L14	USP5,006,286	
L15	USP5,011,425	
L16	USP5,029,254	

Ref	Title	Distinction between reference(s) and claim(s)
M1	USP5,035,482	M1 through M16 do not disclose, at least, a module cap comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
M2	USP5,035,641	
M3	USP5,040,993	
M4	USP5,041,025	
M5	USP5,043,775	
M6	USP5,044,982	
M7	USP5,045,635	
M8	USP5,045,971	
M9	USP5,046,955	
M10	USP5,060,373	
M11	USP5,071,219	
M12	USP5,076,656	
M13	USP5,076,688	
M14	USP5,082,344	
M15	USP5,084,802	
M16	USP5,086,422	

Ref	Title	Distinction between reference(s) and claim(s)
N1	USP5,091,991	N1 through N19 do not disclose, at least, a module cap comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
N2	USP5,093,879	
N3	USP5,094,623	
N4	USP5,101,463	
N5	USP5,104,243	
N6	USP5,107,404	
N7	USP5,108,294	
N8	USP5,109,453	
N9	USP5,113,467	
N10	USP5,116,239	
N11	USP5,117,476	
N12	USP5,118,362	
N13	USP5,118,904	
N14	USP5,120,578	
N15	USP5,122,893	
N16	USP5,124,885	
N17	USP5,125,849	
N18	USP5,127,071	
N19	USP5,132,871	

Ref	Title	Distinction between reference(s) and claim(s)
O1	USP5,134,677	O1 through O17 do not disclose, at least, a module cap comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
O2	USP5,134,679	
O3	USP5,136,063	
O4	USP5,136,152	
O5	USP5,136,603	
O6	USP5,138,537	
O7	USP5,138,678	
O8	USP5,140,663	
O9	USP5,155,786	
O10	USP5,157,769	
O11	USP5,167,139	
O12	USP5,168,537	
O13	USP5,170,146	
O14	USP5,171,167	
O15	USP5,173,059	
O16	USP5,183,404	
O17	USP5,183,405	

Ref	Title	Distinction between reference(s) and claim(s)
P1	USP5,195,911	P1 through P17 do not disclose, at least, a module cap comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
P2	USP5,202,536	
P3	USP5,207,597	
P4	USP5,212,752	
P5	USP5,212,754	
P6	USP5,218,519	
P7	USP5,225,760	
P8	USP5,233,676	
P9	USP5,233,674	
P10	USP5,234,353	
P11	USP5,238,426	
P12	USP5,241,614	
P13	USP5,247,532	
P14	USP5,259,052	
P15	USP5,259,054	
P16	USP5,262,923	
P17	USP5,271,079	

Ref	Title	Distinction between reference(s) and claim(s)
Q1	USP5,274,729	Q1 through Q16 do not disclose, at least, a module cap comprising a first cap portion and a second cap portion to protect a laser diode module and a photo
Q2	USP5,285,466	
Q3	USP5,285,511	



Q4	USP5,285,512	diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
Q5	USP5,286,207	
Q6	USP5,286,247	
Q7	USP5,288,247	
Q8	USP5,289,347	
Q9	USP5,296,813	
Q10	USP5,299,089	
Q11	USP5,304,069	
Q12	USP5,305,182	
Q13	USP5,311,408	
Q14	USP5,315,679	
Q15	USP5,317,663	
Q16	USP5,321,819	

Ref	Title	Distinction between reference(s) and claim(s)
R1	USP5,329,604	R1 through R16 do not disclose, at least, a module cap comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
R2	USP5,333,221	
R3	USP5,333,225	
R4	USP5,337,391	
R5	USP5,337,396	
R6	USP5,340,340	
R7	USP5,345,524	
R8	USP5,345,530	
R9	USP5,353,364	
R10	USP5,353,634	
R11	USP5,356,300	
R12	USP5,357,402	
R13	USP5,361,244	
R14	USP5,361,318	
R15	USP5,366,664	
R16	USP5,372,515	

Ref	Title	Distinction between reference(s) and claim(s)
S1	USP5,375,040	S1 through S16 do not disclose, at least, a module cap comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
S2	USP5,383,793	
S3	USP5,388,995	
S4	USP5,390,268	
S5	USP5,393,249	
S6	USP5,397,242	
S7	USP5,398,154	
S8	USP5,398,295	
S9	USP5,408,384	
S10	USP5,414,787	

S11	USP5,416,668	
S12	USP5,416,870	
S13	USP5,416,872	
S14	USP5,419,717	
S15	USP5,424,573	
S16	USP5,428,703	

Ref	Title	Distinction between reference(s) and claim(s)
T1	USP5,428,704	T1 through T4 do not disclose, at least, a module cap comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
T2	USP5,434,747	
T3	USP5,443,390	
T4	USP5,446,814	
T5	USP5,452,387	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T6	USP5,454,080	T6 through T9 do not disclose, at least, a module cap comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
T7	USP5,455,703	
T8	USP5,463,532	
T9	USP5,469,332	
T10	USP5,470,257	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T11	USP5,470,259	
T12	USP5,475,734	T12 does not disclose, at least, a module cap comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the

		module cap is attached to the optical module.
T13	USP5,477,418	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T14	USP5,478,253	
T15	USP5,478,259	T15 and T16 do not disclose, at least, a module cap comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
T16	USP5,478,260	

Ref	Title	Distinction between reference(s) and claim(s)
U1	USP5,481,634	U1 through U4 do not disclose, at least, a module cap comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
U2	USP5,482,658	
U3	USP5,487,678	
U4	USP5,491,613	
U5	USP5,491,712	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U6	USP5,494,747	U6 does not disclose, at least, a module cap comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
U7	USP5,499,311	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

U8	USP5,499,312	U8 does not disclose, at least, a module cap comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
U9	USP5,504,657	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U10	USP5,506,921	U10 through U14 not disclose, at least, a module cap comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
U11	USP5,506,922	
U12	USP5,507,668	
U13	USP5,526,235	
U14	USP5,527,991	
U15	USP5,534,662	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U16	USP5,535,296	

Ref	Title	Distinction between reference(s) and claim(s)
V1	USP5,535,364	V1 does not disclose, at least, a module cap comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
V2	USP5,545,845	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V3	USP5,546,281	
V4	USP5,547,385	
V5	USP5,548,641	V5 does not disclose, at least, a module cap

		comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
V6	USP5,548,677	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V7	USP5,554,031	V7 through V11 do not disclose, at least, a module cap comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
V8	USP5,554,037	
V9	USP5,567,167	
V10	USP5,577,064	
V11	USP5,580,269	
V12	USP5,588,850	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V13	USP5,598,319	V13 through V15 do not disclose, at least, a module cap comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
V14	USP5,599,595	
V15	USP5,600,470	
V16	USP5,613,860	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
W1	USP5,629,919	These references do not qualify as prior art.

W2	USP5,631,998	Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
W3	USP5,653,596	
W4	USP5,659,459	W4 does not disclose, at least, a module cap comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
W5	USP5,675,428	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
W6	USP5,687,267	
W7	USP5,717,533	
W8	USP5,724,729	
W9	USP5,726,864	
W10	USP5,734,558	
W11	USP5,736,782	
W12	USP5,747,735	
W13	USP5,767,999	
W14	USP5,779,504	
W15	USP5,797,771	
W16	USP5,836,774	

Ref	Title	Distinction between reference(s) and claim(s)
X1	USP5,864,468	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
X2	USP5,879,173	
X3	DE.4239124 A1	X3 through X21 do not disclose, at least, a module cap comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
X4	EP 0 232792 A1	
X5	EP.0 228 278	
X6	EP.0 305112 A2	
X7	EP.0 314 651 A2	
X8	EP.0 413 489 A2	
X9	EP.0 437 161 A2	
X10	EP.0 456 298 B1	
X11	EP.0 530 791 A2	
X12	EP.0 535 473 A1	
X13	EP.0 588 014 A2	
X14	EP.0 600 645 A1	
X15	EP.0 613 032 A2	

X16	EP.0 652 696 A1	
X17	EP.0 656 696 A1	
X18	EP.0 662 259 B1	
X19	EP.442 608 A2	
X20	WO 94/12900	
X21	JP.1-237783	

Ref	Title	Distinction between reference(s) and claim(s)
Y1	JP.2-151084	Y1 through Y19 do not disclose, at least, a module cap comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
Y2	JP.2-181710	
Y3	JP.2-278212	
Y4	JP.2-87837	
Y5	JP.3-20458	
Y6	JP.3-94869	
Y7	JP.4-109593	
Y8	JP.4-122905	
Y9	JP.4-165312	
Y10	JP.4-211208	
Y11	JP.4-221207	
Y12	JP.4-229962	
Y13	JP.4-230978	
Y14	JP.4-234715	
Y15	JP.4-270305	
Y16	JP.4-50901	
Y17	JP.4-87809	
Y18	JP.5-052802	
Y19	JP.5-134147	

Ref	Title	Distinction between reference(s) and claim(s)
Z1	JP.5-152607	Z1 through Z19 do not disclose, at least, a module cap comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
Z2	JP.5-188250	
Z3	JP.5-211379	
Z4	JP.5-218581	
Z5	JP.5-290913	
Z6	JP.5-70955	
Z7	JP.61-158046	
Z8	JP.61-188385	
Z9	JP.63-009325	
Z10	JP.63-16496	
Z11	JP.63-65967	
Z12	JP.63-65978	
Z13	JP.63-82998	
Z14	U-3-20458	

Z15	U-3-94869	
Z16	U-4-87809	
Z17	U-5-052802	
Z18	U-5-70955	
Z19	U-61-158046	

Ref	Title	Distinction between reference(s) and claim(s)
AA1	U-61-188385	AA1 through AA5 do not disclose, at least, a module cap comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
AA2	U-63-16496	
AA3	U-63-65967	
AA4	U-63-65978	
AA5	U-63-82998	

Ref	Title	Distinction between reference(s) and claim(s)
BB1	AT&T Microelectronics, "1408-Type ODL Transceiver" Feb. 1994 preliminary data sheet, p.2-10	BB1 through BB11 do not disclose, at least, a module cap comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
BB2	Ronald L.Soderstrom et al., "An optical Data Link using a CD laser", SPIE Vol.1577 High Speed Fiber Networks and Channels, pp.163-173, 1991	
BB3	BCP, Inc. "Gigabits Over Multimode Optical Fiber" no date	
BB4	Ronald L.Soderstrom et al., "CD laser optical Data Links for Workstation and Midrange Computers", IEEE p.505-509, 1993.	
BB5	FDDI Low-Cost Fiber Physical Layer Medium Dependent (LCF-PMD) Common Receiver Footprint, no date.	
BB6	HP Module HFBR-5103, FDDI Data Sheet, <a href="http://www.hp.com/HP-COMP/fiber/hfbr5103.html">http://www.hp.com/HP-COMP/fiber/hfbr5103.html</a> , Jun. 11, 1998	
BB7	IBM Technical Disclosure Bulletin "Optical Link Card Guide/Retention System", <a href="http://www.patents.ibm.com/tdbs/tdb?&amp;order=93A+60964">www.patents.ibm.com/tdbs/tdb?&amp;order=93A+60964</a> , April 1993	
BB8	IBM, "A Proposal for a New High Performance... "Optoelectronics Enterprise Oct.1992 ANSI Meeting, Oct.13, 1992	
BB9	IBM, et al, "GLM Family", FCSI-301-Ren Sun, GLM, , , , , FCSI-301-Rev1.0, Feb. 16, 1994.	
BB10	Method Electronics, Inc., "DM 1063-DBLM9 Copper Gigabit Link Module" data sheet, (no date)	
BB11	"Raylan Joins Low-Wavelength Push -850 nm Transceiver", Electronic Engineering Times, Aug.1993.	

Ref	Title	Distinction between reference(s) and claim(s)
CC1	Sumitomo Electric Fiber Optics Corp. "Transceiver Manufacturers to Support Common Footprint for Desktop FDDI Applications, " June 23, 1992.	CC1 does not disclose, at least, a module cap comprising a first cap portion and a second cap



		portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
CC2	Sun Microsystems computer Co. et al., Gigabit Interface Converter (GBIC), Rev 4.4, Dec. 1, 1997	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
CC3	Siemens, "Who provides Low-Cost Transceivers for all Standards?" no date.	CC3 through CC11 do not disclose, at least, a module cap comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
CC4	AMP "PC Board Connectors", Product Guide 82759, pp. 7104-7108, Catalog E2750 issued Jun. 1991	
CC5	AMP Inc. "Lytel Molded-Optronic SC Duplex Transceiver" Catalog 65922, Dec. 1993.	
CC6	AMPHENOL Engineering News vol. 7 No. 6., pp241, 264-65, Nov. 1994	
CC7	Baldwin and Kellerman, "Fiber Optic Module Interface Attachment" Research disclosure, Kenneth Mason Publications Ltd., England, Apr. 1991.	
CC8	Block and Gaio "Optical Link Card guide/Retention Sys" RESEARCH DISCLOSURE Kenneth Mason Publications Ltd., England, Apr. 1993.	
CC9	Cinch Hinge Connectors Catalog CM-16, Jul. 1963.	
CC10	Martin H. Weik, "Communication Standard Dictionary" p.454. definition of LED, Van Nostrand Reinhold Co.	
CC11	Edward R. Salmon, Encapsulation of Electronic Devices and Components, Marcel Dekker Inc., New York, 1987	

Ref	Title	Distinction between reference(s) and claim(s)
DD1	Dieter Gwinner, Conductive Coatings: Vacuum Evaporated Aluminum for Selective Shielding of Plastic Housings, no date.	DD1 through DD11 do not disclose, at least, a module cap comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
DD2	HEADS Up--Sumitomo Electric Lightwave joins Other in Announcement, May 11, 1995	
DD3	Robert C. Herron, High Density Input/Output Connector Systems, 3M Electronic Products Divisions, 1990	
DD4	Shortwave Opto Assembly, IBM OptoElectronic Enterprises; IBM/OEE Market Survey Only, Rev. 1, Jan. 6, 1993	
DD5	"Minimizing Electrostatic Discharge Damage to a Cartridge", IBM Technical Disclosure Bulletin, vol. 29 No. 10. Mar., 1987	
DD6	Japanese Standards Association " F04 Type Connectors for Optical Fiber Cords JIS C 5973" Japanese Standards Association, 1990.	
DD7	Ronald LSoderstrom et al., A Miniaturized Fiber Optic Laser Receptacle Using a Compact Disk(CD)... FOC/LAN'87&MFOC-WEST, pp.383-385, no date.	
DD8	"Transceiver Module Assembly", IBM Technical Disclosure Bulletin, Oct. 1979, <a href="https://www.delphion.com/tbds/tdb?o=79A+06370">https://www.delphion.com/tbds/tdb?o=79A+06370</a> , last visited Mar. 3, 2005.	

DD9	Ronald L.Soderstrom et al.,Optical Components and Electronic Packaging for High Performance Optical Data Links,THE RESEARCH INVESTMENT,p.19-28(no date).	
DD10	Thomas & Betts INFO-LAN Modem 1998	
DD11	"Active component manufacturers lower the cost of fiber to the desktop",Lightwave,Feb.1994 pp.58,67.	

Ref	Title	Distinction between reference(s) and claim(s)
EE1	Fibre Distributed Data Interface(FDDI)-Token Ring Low-Cost Fibre Physical Layer Medium Dependent (LCF-PMD),American National Standards Institute,1996.	EE1 through EE11 do not disclose, at least, a module cap comprising a first cap portion and a second cap portion to protect a laser diode module and a photo diode module of an optical module, respectively, such that the first cap portion and the second cap portion are each formed having a cavity with a projection formed therein, and into each of the cavities one of a laser diode module and a photo diode module is at least partially inserted when the module cap is attached to the optical module.
EE2	Communications Standard Dictionary; p.454,definition of inhomogeneous fiber,Van Nostrand Reinhold Publishing,1983	
EE3	"Transmitter/receiver assembly simplifies use of fibre optics", Design Engineering,p.19,Button Press,Ltd.,April 1980.	
EE4	Ronald L.Soderstrom et al., "CD laser as a fiber optic source for computer data links",Fiber Optic Datacom and Computer Networks,SPIE-The International Society for Optical Engineering,Vol.1577,pp.174-181,1988	
EE5	David A.Knodel et al., "Open Fibre Control,a laser safety interlock technique",High-Speed Fiber Networks and Channels,SPIE-The International Society for Optical Engineering Proceedings,Vol.991,pp.179-182,1992	
EE6	"IBM Technical Disclosure Bulletin, Electrostatic Dissipative Enclosed Connector", Vol.34,No.7B,Dec.1991	
EE7	"High Reliability SW Laser For Optical Data Links", LEOS '93 Conference Proceedings, IEEE Lasers and Electro-Optics Society 1993 Annual Meeting;	
EE8	Minimizing Electrostatic Discharge to a Cartridge,IBM Technical Disclosure Bulletin,March 1987, <a href="https://www.delphion.com/tdb?o=87A%2060509">https://www.delphion.com/tdb?o=87A%2060509</a> ,last visited Mar.8,2005.	
EE9	K.P.Jackson et al., "High-Density,Array,Optical Interconnects for Multi-Chip Module Conference MCMC-92 Proceedings,IEEE Computer Society Press.	
EE10	TDB:Stackable Circuit Card Packaging within a Logic Cage,IBM Technical Disclosure Bulletin,Dec.1992, <a href="https://www.delphion.com/tbds/tdb?o=92A%2063485">https://www.delphion.com/tbds/tdb?o=92A%2063485</a> ,last visited Mar.8,2005	
EE11	Jeff Hechi,The Laser Guidebook,2nd ed.,McGraw Hill,Inc.,1992	

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Ref	Title	Distinction between reference(s) and claim(s)
A1	Re.32,502	A1 through A16 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity, such that the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
A2	USP2,899,669	
A3	USP3,264,601	
A4	USP3,332,860	
A5	USP3,474,380	
A6	USP3,497,866	
A7	USP3,523,269	
A8	USP3,670,290	
A9	USP3,673,545	
A10	USP3,706,869	
A11	USP3,737,729	
A12	USP3,790,923	
A13	USP3,792,284	
A14	USP3,805,116	
A15	USP3,809,908	
A16	USP3,976,877	

Ref	Title	Distinction between reference(s) and claim(s)
B1	USP3,990,761	B1 through B16 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity, such that the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
B2	USP4,047,242	
B3	USP4,156,903	
B4	USP4,161,650	
B5	USP4,167,303	
B6	USP4,176,897	
B7	USP4,217,019	
B8	USP4,217,488	
B9	USP4,226,491	
B10	USP4,234,968	
B11	USP4,249,266	
B12	USP4,252,402	
B13	USP4,257,124	
B14	USP4,268,756	
B15	USP4,273,413	
B16	USP4,276,656	

Ref	Title	Distinction between reference(s) and claim(s)
C1	USP4,294,682	C1 through C16 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity, such that the
C2	USP4,295,181	
C3	USP4,301,543	
C4	USP4,330,870	

C5	USP4,345,808	module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
C6	USP4,347,655	
C7	USP4,357,606	
C8	USP4,360,248	
C9	USP4,366,565	
C10	USP4,369,494	
C11	USP4,380,360	
C12	USP4,388,671	
C13	USP4,393,516	
C14	USP4,398,073	
C15	USP4,398,780	
C16	USP4,399,563	

Ref	Title	Distinction between reference(s) and claim(s)
D1	USP4,408,273	D1 through D16 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity, such that the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
D2	USP4,422,088	
D3	USP4,427,879	
D4	USP4,430,699	
D5	USP4,434,537	
D6	USP4,437,190	
D7	USP4,439,006	
D8	USP4,446,515	
D9	USP4,449,244	
D10	USP4,449,784	
D11	USP4,453,903	
D12	USP4,459,658	
D13	USP4,461,537	
D14	USP4,470,154	
D15	USP4,486,059	
D16	USP4,493,113	

Ref	Title	Distinction between reference(s) and claim(s)
E1	USP4,501,021	E1 through E16 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity, such that the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
E2	USP4,502,130	
E3	USP4,505,035	
E4	USP4,506,937	
E5	USP4,510,553	
E6	USP4,511,207	
E7	USP4,514,586	
E8	USP4,516,204	
E9	USP4,519,670	
E10	USP4,519,672	
E11	USP4,519,673	

E12	USP4,522,463	
E13	USP4,526,438	
E14	USP4,526,986	
E15	USP4,527,286	
E16	USP4,529,266	

Ref	Title	Distinction between reference(s) and claim(s)
F1	USP4,530,566	F1 through F16 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity, such that the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
F2	USP4,531,810	
F3	USP4,533,208	
F4	USP4,533,209	
F5	USP4,534,616	
F6	USP4,534,617	
F7	USP4,535,233	
F8	USP4,537,468	
F9	USP4,539,476	
F10	USP4,540,237	
F11	USP4,540,246	
F12	USP4,541,036	
F13	USP4,541,685	
F14	USP4,542,076	
F15	USP4,544,231	
F16	USP4,544,233	

Ref	Title	Distinction between reference(s) and claim(s)
G1	USP4,544,234	G1 through G16 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity, such that the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
G2	USP4,545,074	
G3	USP4,545,077	
G4	USP4,545,642	
G5	USP4,545,643	
G6	USP4,545,644	
G7	USP4,545,645	
G8	USP4,548,465	
G9	USP4,548,466	
G10	USP4,548,467	
G11	USP4,549,782	
G12	USP4,549,783	
G13	USP4,550,975	
G14	USP4,553,811	
G15	USP4,553,813	
G16	USP4,553,814	

Ref	Title	Distinction between reference(s) and claim(s)
H1	USP4,556,279	H1 through H16 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity, such that the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
H2	USP4,556,281	
H3	USP4,556,282	
H4	USP4,557,551	
H5	USP4,560,234	
H6	USP4,563,057	
H7	USP4,566,753	
H8	USP4,568,145	
H9	USP4,569,569	
H10	USP4,573,760	
H11	USP4,580,295	
H12	USP4,580,872	
H13	USP4,588,256	
H14	USP4,589,728	
H15	USP4,597,631	
H16	USP4,614,836	

Ref	Title	Distinction between reference(s) and claim(s)
I1	USP4,629,270	I1 through I16 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity, such that the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
I2	USP4,634,239	
I3	USP4,641,371	
I4	USP4,647,148	
I5	USP4,652,976	
I6	USP4,663,240	
I7	USP4,663,603	
I8	USP4,678,264	
I9	USP4,679,883	
I10	USP4,695,106	
I11	USP4,697,864	
I12	USP4,708,433	
I13	USP4,715,675	
I14	USP4,720,630	
I15	USP4,722,584	
I16	USP4,736,100	

Ref	Title	Distinction between reference(s) and claim(s)
J1	USP4,756,593	J1 through J16 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity, such that the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted.
J2	USP4,762,388	
J3	USP4,767,179	
J4	USP4,772,931	
J5	USP4,779,952	
J6	USP4,789,218	

J7	USP4,798,430	inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
J8	USP4,798,440	
J9	USP4,807,006	
J10	USP4,807,955	
J11	USP4,808,115	
J12	USP4,811,165	
J13	USP4,812,133	
J14	USP4,821,145	
J15	USP4,823,235	
J16	USP4,838,630	

Ref	Title	Distinction between reference(s) and claim(s)
K1	USP4,840,451	K1 through K16 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity, such that the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
K2	USP4,844,581	
K3	USP4,847,711	
K4	USP4,847,771	
K5	USP4,849,944	
K6	USP4,857,002	
K7	USP4,862,327	
K8	USP4,872,212	
K9	USP4,872,736	
K10	USP4,881,789	
K11	USP4,884,336	
K12	USP4,897,711	
K13	USP4,906,197	
K14	USP4,927,225	
K15	USP4,944,568	
K16	USP4,945,448	

Ref	Title	Distinction between reference(s) and claim(s)
L1	USP4,953,929	L1 through L16 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity, such that the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
L2	USP4,955,817	
L3	USP4,963,104	
L4	USP4,967,312	
L5	USP4,977,329	
L6	USP4,979,793	
L7	USP4,979,794	
L8	USP4,986,625	
L9	USP4,989,934	
L10	USP4,990,104	
L11	USP4,991,062	
L12	USP5,002,495	
L13	USP5,004,434	

L14	USP5,006,286	
L15	USP5,011,425	
L16	USP5,029,254	

Ref	Title	Distinction between reference(s) and claim(s)
M1	USP5,035,482	M1 through M16 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity, such that the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
M2	USP5,035,641	
M3	USP5,040,993	
M4	USP5,041,025	
M5	USP5,043,775	
M6	USP5,044,982	
M7	USP5,045,635	
M8	USP5,045,971	
M9	USP5,046,955	
M10	USP5,060,373	
M11	USP5,071,219	
M12	USP5,076,656	
M13	USP5,076,688	
M14	USP5,082,344	
M15	USP5,084,802	
M16	USP5,086,422	

Ref	Title	Distinction between reference(s) and claim(s)
N1	USP5,091,991	N1 through N19 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity, such that the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
N2	USP5,093,879	
N3	USP5,094,623	
N4	USP5,101,463	
N5	USP5,104,243	
N6	USP5,107,404	
N7	USP5,108,294	
N8	USP5,109,453	
N9	USP5,113,467	
N10	USP5,116,239	
N11	USP5,117,476	
N12	USP5,118,362	
N13	USP5,118,904	
N14	USP5,120,578	
N15	USP5,122,893	
N16	USP5,124,885	
N17	USP5,125,849	
N18	USP5,127,071	
N19	USP5,132,871	



Ref	Title	Distinction between reference(s) and claim(s)
O1	USP5,134,677	O1 through O17 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity, such that the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
O2	USP5,134,679	
O3	USP5,136,063	
O4	USP5,136,152	
O5	USP5,136,603	
O6	USP5,138,537	
O7	USP5,138,678	
O8	USP5,140,663	
O9	USP5,155,786	
O10	USP5,157,769	
O11	USP5,167,139	
O12	USP5,168,537	
O13	USP5,170,146	
O14	USP5,171,167	
O15	USP5,173,059	
O16	USP5,183,404	
O17	USP5,183,405	

Ref	Title	Distinction between reference(s) and claim(s)
P1	USP5,195,911	P1 through P17 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity, such that the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
P2	USP5,202,536	
P3	USP5,207,597	
P4	USP5,212,752	
P5	USP5,212,754	
P6	USP5,218,519	
P7	USP5,225,760	
P8	USP5,233,676	
P9	USP5,233,674	
P10	USP5,234,353	
P11	USP5,238,426	
P12	USP5,241,614	
P13	USP5,247,532	
P14	USP5,259,052	
P15	USP5,259,054	
P16	USP5,262,923	
P17	USP5,271,079	

Ref	Title	Distinction between reference(s) and claim(s)
Q1	USP5,274,729	Q1 through Q16 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection
Q2	USP5,285,466	
Q3	USP5,285,511	

Q4	USP5,285,512	formed in a photo diode cavity, such that the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
Q5	USP5,286,207	
Q6	USP5,286,247	
Q7	USP5,288,247	
Q8	USP5,289,347	
Q9	USP5,296,813	
Q10	USP5,299,089	
Q11	USP5,304,069	
Q12	USP5,305,182	
Q13	USP5,311,408	
Q14	USP5,315,679	
Q15	USP5,317,663	
Q16	USP5,321,819	

Ref	Title	Distinction between reference(s) and claim(s)
R1	USP5,329,604	R1 through R16 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity, such that the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
R2	USP5,333,221	
R3	USP5,333,225	
R4	USP5,337,391	
R5	USP5,337,396	
R6	USP5,340,340	
R7	USP5,345,524	
R8	USP5,345,530	
R9	USP5,353,364	
R10	USP5,353,634	
R11	USP5,356,300	
R12	USP5,357,402	
R13	USP5,361,244	
R14	USP5,361,318	
R15	USP5,366,664	
R16	USP5,372,515	

Ref	Title	Distinction between reference(s) and claim(s)
S1	USP5,375,040	S1 through S16 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity, such that the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
S2	USP5,383,793	
S3	USP5,388,995	
S4	USP5,390,268	
S5	USP5,393,249	
S6	USP5,397,242	
S7	USP5,398,154	
S8	USP5,398,295	
S9	USP5,408,384	
S10	USP5,414,787	

S11	USP5,416,668	
S12	USP5,416,870	
S13	USP5,416,872	
S14	USP5,419,717	
S15	USP5,424,573	
S16	USP5,428,703	

Ref	Title	Distinction between reference(s) and claim(s)
T1	USP5,428,704	T1 through T4 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity, such that the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
T2	USP5,434,747	
T3	USP5,443,390	
T4	USP5,446,814	
T5	USP5,452,387	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T6	USP5,454,080	T6 through T9 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity, such that the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
T7	USP5,455,703	
T8	USP5,463,532	
T9	USP5,469,332	
T10	USP5,470,257	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T11	USP5,470,259	
T12	USP5,475,734	T12 does not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity, such that the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
T13	USP5,477,418	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T14	USP5,478,253	
T15	USP5,478,259	T15 and T16 do not disclose, at least, a module cap

T16	USP5,478,260	comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity, such that the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
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Ref	Title	Distinction between reference(s) and claim(s)
U1	USP5,481,634	U1 through U4 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity, such that the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
U2	USP5,482,658	
U3	USP5,487,678	
U4	USP5,491,613	
U5	USP5,491,712	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U6	USP5,494,747	U6 does not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity, such that the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
U7	USP5,499,311	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U8	USP5,499,312	U8 does not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity, such that the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
U9	USP5,504,657	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

U10	USP5,506,921	U10 through U14 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity, such that the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
U11	USP5,506,922	
U12	USP5,507,668	
U13	USP5,526,235	
U14	USP5,527,991	
U15	USP5,534,662	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U16	USP5,535,296	

Ref	Title	Distinction between reference(s) and claim(s)
V1	USP5,535,364	V1 does not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity, such that the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
V2	USP5,545,845	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V3	USP5,546,281	
V4	USP5,547,385	
V5	USP5,548,641	V5 does not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity, such that the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
V6	USP5,548,677	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V7	USP5,554,031	V7 through V11 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity, such that the
V8	USP5,554,037	
V9	USP5,567,167	
V10	USP5,577,064	

V11	USP5,580,269	module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
V12	USP5,588,850	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V13	USP5,598,319	V13 through V15 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity, such that the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
V14	USP5,599,595	
V15	USP5,600,470	
V16	USP5,613,860	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
W1	USP5,629,919	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
W2	USP5,631,998	
W3	USP5,653,596	
W4	USP5,659,459	W4 does not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity, such that the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
W5	USP5,675,428	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
W6	USP5,687,267	
W7	USP5,717,533	
W8	USP5,724,729	
W9	USP5,726,864	
W10	USP5,734,558	
W11	USP5,736,782	
W12	USP5,747,735	
W13	USP5,767,999	
W14	USP5,779,504	

W15	USP5,797,771	
W16	USP5,836,774	

Ref	Title	Distinction between reference(s) and claim(s)
X1	USP5,864,468	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
X2	USP5,879,173	
X3	DE.4239124 A1	X3 through X21 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity, such that the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
X4	EP 0 232792 A1	
X5	EP.0 228 278	
X6	EP.0 305112 A2	
X7	EP.0 314 651 A2	
X8	EP.0 413 489 A2	
X9	EP.0 437 161 A2	
X10	EP.0 456 298 B1	
X11	EP.0 530 791 A2	
X12	EP.0 535 473 A1	
X13	EP.0 588 014 A2	
X14	EP.0 600 645 A1	
X15	EP.0 613 032 A2	
X16	EP.0 652 696 A1	
X17	EP.0 656 696 A1	
X18	EP.0 662 259 B1	
X19	EP.442 608 A2	
X20	WO 94/12900	
X21	JP.1-237783	

Ref	Title	Distinction between reference(s) and claim(s)
Y1	JP.2-151084	Y1 through Y19 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity, such that the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
Y2	JP.2-181710	
Y3	JP.2-278212	
Y4	JP.2-87837	
Y5	JP.3-20458	
Y6	JP.3-94869	
Y7	JP.4-109593	
Y8	JP.4-122905	
Y9	JP.4-165312	
Y10	JP.4-211208	
Y11	JP.4-221207	
Y12	JP.4-229962	
Y13	JP.4-230978	
Y14	JP.4-234715	

Y15	JP.4-270305	
Y16	JP.4-50901	
Y17	JP.4-87809	
Y18	JP.5-052802	
Y19	JP.5-134147	

Ref	Title	Distinction between reference(s) and claim(s)
Z1	JP.5-152607	Z1 through Z19 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity, such that the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
Z2	JP.5-188250	
Z3	JP.5-211379	
Z4	JP.5-218581	
Z5	JP.5-290913	
Z6	JP.5-70955	
Z7	JP.61-158046	
Z8	JP.61-188385	
Z9	JP.63-009325	
Z10	JP.63-16496	
Z11	JP.63-65967	
Z12	JP.63-65978	
Z13	JP.63-82998	
Z14	U-3-20458	
Z15	U-3-94869	
Z16	U-4-87809	
Z17	U-5-052802	
Z18	U-5-70955	
Z19	U-61-158046	

Ref	Title	Distinction between reference(s) and claim(s)
AA1	U-61-188385	AA1 through AA5 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity, such that the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
AA2	U-63-16496	
AA3	U-63-65967	
AA4	U-63-65978	
AA5	U-63-82998	

Ref	Title	Distinction between reference(s) and claim(s)
BB1	AT&T Microelectronics, "1408-Type ODL Transceiver"Feb. 1994 preliminary data sheet.p.2-10	BB1 through BB11 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity, such that
BB2	Ronald LSoderstrom et al., "An optical Data Link using a CD laser", SPIE Vol.1577 High Speed Fiber Networks and Channels, pp.163-173,1991	
BB3	BCP, Inc. "Gigabits Over Multimode Optical Fiber"no date	



BB4	Ronald L.Soderstrom et al., "CD laser optical Data Links for Workstation and Midrange Computers", IEEE p.505-509, 1993.	the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
BB5	FDDI Low-Cost Fiber Physical Layer Medium Dependent (LCF-PMD) Common Receiver Footprint, no date.	
BB6	HP Module HFBR-5103, FDDI Data Sheet, <a href="http://www.hp.com/HP-COMP/fiber/hfbr5103.html">http://www.hp.com/HP-COMP/fiber/hfbr5103.html</a> , Jun. 11, 1998	
BB7	IBM Technical Disclosure Bulletin "Optical Link Card Guide/Retention System". <a href="http://www.patents.ibm.com/tbbs/tdb?&amp;order=93A+60964">www.patents.ibm.com/tbbs/tdb?&amp;order=93A+60964</a> , April 1993	
BB8	IBM, "A Proposal for a New High Performance... "Optoelectronics Enterprise Oct. 1992 ANSI Meeting, Oct. 13, 1992	
BB9	IBM, et al, "GLM Family", FCSI-301-Ren Sun, GLM, , , , , FCSI-301-Rev1.0, Feb. 16, 1994.	
BB10	Methode Electronics, Inc., "DM 1063-DBLM9 Copper Gigabit Link Module" data sheet, (no date)	
BB11	"Raylan Joins Low-Wavelength Push -850 nm Transceiver", Electronic Engineering Times, Aug. 1993.	

Ref	Title	Distinction between reference(s) and claim(s)
CC1	Sumitomo Electric Fiber Optics Corp. "Transceiver Manufacturers to Support Common Footprint for Desktop FDDI Applications, " June 23, 1992.	CC1 does not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity, such that the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
CC2	Sun Microsystems computer Co. et al., Gigabit Interface Converter (GBIC), Rev 4.4, Dec. 1, 1997	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
CC3	Siemens, "Who provides Low-Cost Transceivers for all Standards?" no date.	CC3 through CC11 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity, such that the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
CC4	AMP "PC Board Connectors", Product Guide 82759, pp. 7104-7108, Catalog E2750 issued Jun. 1991	
CC5	AMP Inc. "Lytel Molded-Optronic SC Duplex Transceiver" Catalog 65922, Dec. 1993.	
CC6	AMPHENOL Engineering News vol. 7 No. 6. , pp241, 264-65, Nov. 1994	
CC7	Baldwin and Kellerman, "Fiber Optic Module Interface Attachment" Research disclosure, Kenneth Mason Publications Ltd., England, Apr. 1991.	
CC8	Block and Gaio "Optical Link Card guide/Retention Sys" RESEARCH DISCLOSURE Kenneth Mason Publications Ltd., England, Apr. 1993.	
CC9	Cinch Hinge Connectors Catalog CM-16, Jul. 1963.	
CC10	Martin H. Weik, "Communication Standard Dictionary" p.454. definition of LED, Van Nostrand Reinhold Co.	
CC11	Edward R. Salmon, Encapsulation of Electronic Devices and Components, Marcel Dekker Inc., New York, 1987	

Ref	Title	Distinction between reference(s) and claim(s)
DD1	Dieter Gwinner,Conductive Coatings:Vacuum Evaporated Aluminum for Selective Shielding of Plastic Housings,no date.	DD1 through DD11 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity, such that the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
DD2	HEADS Up--Sumitomo Electric Lightwave joins Other in Announcement,May 11,1995	
DD3	Robert C. Herron,High Density Input/Output Connector Systems,3M Electronic Products Divisions,1990	
DD4	Shortwave Opto Assembly,IBM OptoElectronic Enterprises; IBM/OEE Market Survey Only, Rev.1,Jan.6,1993	
DD5	"Minimizing Electrostatic Discharge Damage to a Cartridge",IBM Technical Disclosure Bulletin, vol. 29 No. 10. Mar.,1987	
DD6	Japanese Standards Association " F04 Type Connectors for Optical Fiber Cords JIS C 5973"Japanese Standards Association,1990.	
DD7	Ronald L.Soderstrom et al.,A Miniaturized Fiber Optic Laser Receptacle Using a Compact Disk(CD)··· FOC/LAN '87&MFOC-WEST,pp.383-385,no date.	
DD8	"Transceiver Module Assembly", IBM Technical Disclosure Bulletin,Oct.1979,https://www.delphion.com/tbds/tdb?o=79A+06370,last visited Mar.3,2005.	
DD9	Ronald L.Soderstrom et al.,Optical Components and Electronic Packaging for High Performance Optical Data Links,THE RESEARCH INVESTMENT,p.19-28(no date).	
DD10	Thomas & Betts INFO-LAN Modem 1998	
DD11	"Active component manufacturers lower the cost of fiber to the desktop",Lightwave,Feb. 1994 pp.58,67.	

Ref	Title	Distinction between reference(s) and claim(s)
EE1	Fibre Distributed Data Interface(FDDI)-Token Ring Low-Cost Fibre Physical Layer Medium Dependent (LCF-PMD),American National Standards Institute,1996.	EE1 through EE11 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity, such that the module cap is formed having the laser diode cavity into which a laser diode module is at least partially inserted and the photo diode cavity into which a photo diode module is at least partially inserted.
EE2	Communications Standard Dictionary; p.454,definition of inhomogeneous fiber,Van Nostrand Reinhold Publishing,1983	
EE3	"Transmitter/receiver assembly simplifies use of fibre optics", Design Engineering,p.19,Button Press,Ltd.,April 1980.	
EE4	Ronald L.Soderstrom et al., "CD laser as a fiber optic source for computer data links",Fiber Optic Datacom and Computer Networks,SPIE-The International Society for Optical Engineering,Vol.1577,pp.174-181,1988	
EE5	David A.Knodel et al., "Open Fibre Control,a laser safety interlock technique",High-Speed Fiber Networks and Channels,SPIE-The International Society for Optical Engineering Proceedings,Vol.991,pp.179-182,1992	
EE6	"IBM Technical Disclosure Bulletin, Electrostatic Dissipative Enclosed Connector", Vol.34,No.7B,Dec.1991	
EE7	"High Reliability SW Laser For Optical Data Links", LEOS '93 Conference Proceedings, IEEE Lasers and Electro-Optics Society 1993 Annual Meeting;	

EE8	Minimizing Electrostatic Discharge to a Cartridge, IBM Technical Disclosure Bulletin, March 1987, <a href="https://www.delphion.com/tdb?o=87A%2060509">https://www.delphion.com/tdb?o=87A%2060509</a> , last visited Mar. 8, 2005.	
EE9	K.P. Jackson et al., "High-Density, Array, Optical Interconnects for Multi-Chip Module Conference MCMC-92 Proceedings, IEEE Computer Society Press.	
EE10	TDB: Stackable Circuit Card Packaging within a Logic Cage, IBM Technical Disclosure Bulletin, Dec. 1992, <a href="https://www.delphion.com/tbds/tdb?o=92A%2063485">https://www.delphion.com/tbds/tdb?o=92A%2063485</a> , last visited Mar. 8, 2005	
EE11	Jeff Hechi, The Laser Guidebook, 2nd ed., McGraw Hill, Inc., 1992	

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Ref	Title	Distinction between reference(s) and claim(s)
A1	Re.32,502	A1 through A16 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
A2	USP2,899,669	
A3	USP3,264,601	
A4	USP3,332,860	
A5	USP3,474,380	
A6	USP3,497,866	
A7	USP3,523,269	
A8	USP3,670,290	
A9	USP3,673,545	
A10	USP3,706,869	
A11	USP3,737,729	
A12	USP3,790,923	
A13	USP3,792,284	
A14	USP3,805,116	
A15	USP3,809,908	
A16	USP3,976,877	

Ref	Title	Distinction between reference(s) and claim(s)
B1	USP3,990,761	B1 through B16 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
B2	USP4,047,242	
B3	USP4,156,903	
B4	USP4,161,650	
B5	USP4,167,303	
B6	USP4,176,897	
B7	USP4,217,019	
B8	USP4,217,488	
B9	USP4,226,491	
B10	USP4,234,968	
B11	USP4,249,266	
B12	USP4,252,402	
B13	USP4,257,124	
B14	USP4,268,756	
B15	USP4,273,413	
B16	USP4,276,656	

Ref	Title	Distinction between reference(s) and claim(s)
C1	USP4,294,682	C1 through C16 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
C2	USP4,295,181	
C3	USP4,301,543	
C4	USP4,330,870	

C5	USP4,345,808	
C6	USP4,347,655	
C7	USP4,357,606	
C8	USP4,360,248	
C9	USP4,366,565	
C10	USP4,369,494	
C11	USP4,380,360	
C12	USP4,388,671	
C13	USP4,393,516	
C14	USP4,398,073	
C15	USP4,398,780	
C16	USP4,399,563	

Ref	Title	Distinction between reference(s) and claim(s)
D1	USP4,408,273	D1 through D16 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
D2	USP4,422,088	
D3	USP4,427,879	
D4	USP4,430,699	
D5	USP4,434,537	
D6	USP4,437,190	
D7	USP4,439,006	
D8	USP4,446,515	
D9	USP4,449,244	
D10	USP4,449,784	
D11	USP4,453,903	
D12	USP4,459,658	
D13	USP4,461,537	
D14	USP4,470,154	
D15	USP4,486,059	
D16	USP4,493,113	

Ref	Title	Distinction between reference(s) and claim(s)
E1	USP4,501,021	E1 through E16 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
E2	USP4,502,130	
E3	USP4,505,035	
E4	USP4,506,937	
E5	USP4,510,553	
E6	USP4,511,207	
E7	USP4,514,586	
E8	USP4,516,204	
E9	USP4,519,670	
E10	USP4,519,672	
E11	USP4,519,673	

E12	USP4,522,463	
E13	USP4,526,438	
E14	USP4,526,986	
E15	USP4,527,286	
E16	USP4,529,266	

Ref	Title	Distinction between reference(s) and claim(s)
F1	USP4,530,566	F1 through F16 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
F2	USP4,531,810	
F3	USP4,533,208	
F4	USP4,533,209	
F5	USP4,534,616	
F6	USP45,34,617	
F7	USP4,535,233	
F8	USP4,537,468	
F9	USP4,539,476	
F10	USP4,540,237	
F11	USP4,540,246	
F12	USP4,541,036	
F13	USP4,541,685	
F14	USP4,542,076	
F15	USP4,544,231	
F16	USP4,544,233	

Ref	Title	Distinction between reference(s) and claim(s)
G1	USP4,544,234	G1 through G16 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
G2	USP4,545,074	
G3	USP4,545,077	
G4	USP4,545,642	
G5	USP4,545,643	
G6	USP4,545,644	
G7	USP4,545,645	
G8	USP4,548,465	
G9	USP4,548,466	
G10	USP4,548,467	
G11	USP4,549,782	
G12	USP4,549,783	
G13	USP4,550,975	
G14	USP4,553,811	
G15	USP4,553,813	
G16	USP4,553,814	

Ref	Title	Distinction between reference(s) and claim(s)
H1	USP4,556,279	H1 through H16 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
H2	USP4,556,281	
H3	USP4,556,282	
H4	USP4,557,551	
H5	USP4,560,234	
H6	USP4,563,057	
H7	USP4,566,753	
H8	USP4,568,145	
H9	USP4,569,569	
H10	USP4,573,760	
H11	USP4,580,295	
H12	USP4,580,872	
H13	USP4,588,256	
H14	USP4,589,728	
H15	USP4,597,631	
H16	USP4,614,836	

Ref	Title	Distinction between reference(s) and claim(s)
I1	USP4,629,270	I1 through I16 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
I2	USP4,634,239	
I3	USP4,641,371	
I4	USP4,647,148	
I5	USP4,652,976	
I6	USP4,663,240	
I7	USP4,663,603	
I8	USP4,678,264	
I9	USP4,679,883	
I10	USP4,695,106	
I11	USP4,697,864	
I12	USP4,708,433	
I13	USP4,715,675	
I14	USP4,720,630	
I15	USP4,722,584	
I16	USP4,736,100	

Ref	Title	Distinction between reference(s) and claim(s)
J1	USP4,756,593	J1 through J16 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
J2	USP4,762,388	
J3	USP4,767,179	
J4	USP4,772,931	
J5	USP4,779,952	
J6	USP4,789,218	

J7	USP4,798,430	
J8	USP4,798,440	
J9	USP4,807,006	
J10	USP4,807,955	
J11	USP4,808,115	
J12	USP4,811,165	
J13	USP4,812,133	
J14	USP4,821,145	
J15	USP4,823,235	
J16	USP4,838,630	

Ref	Title	Distinction between reference(s) and claim(s)
K1	USP4,840,451	K1 through K16 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
K2	USP4,844,581	
K3	USP4,847,711	
K4	USP4,847,771	
K5	USP4,849,944	
K6	USP4,857,002	
K7	USP4,862,327	
K8	USP4,872,212	
K9	USP4,872,736	
K10	USP4,881,789	
K11	USP4,884,336	
K12	USP4,897,711	
K13	USP4,906,197	
K14	USP4,927,225	
K15	USP4,944,568	
K16	USP4,945,448	

Ref	Title	Distinction between reference(s) and claim(s)
L1	USP4,953,929	L1 through L16 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
L2	USP4,955,817	
L3	USP4,963,104	
L4	USP4,967,312	
L5	USP4,977,329	
L6	USP4,979,793	
L7	USP4,979,794	
L8	USP4,986,625	
L9	USP4,989,934	
L10	USP4,990,104	
L11	USP4,991,062	
L12	USP5,002,495	
L13	USP5,004,434	



L14	USP5,006,286	
L15	USP5,011,425	
L16	USP5,029,254	

Ref	Title	Distinction between reference(s) and claim(s)
M1	USP5,035,482	M1 through M16 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
M2	USP5,035,641	
M3	USP5,040,993	
M4	USP5,041,025	
M5	USP5,043,775	
M6	USP5,044,982	
M7	USP5,045,635	
M8	USP5,045,971	
M9	USP5,046,955	
M10	USP5,060,373	
M11	USP5,071,219	
M12	USP5,076,656	
M13	USP5,076,688	
M14	USP5,082,344	
M15	USP5,084,802	
M16	USP5,086,422	

Ref	Title	Distinction between reference(s) and claim(s)
N1	USP5,091,991	N1 through N19 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
N2	USP5,093,879	
N3	USP5,094,623	
N4	USP5,101,463	
N5	USP5,104,243	
N6	USP5,107,404	
N7	USP5,108,294	
N8	USP5,109,453	
N9	USP5,113,467	
N10	USP5,116,239	
N11	USP5,117,476	
N12	USP5,118,362	
N13	USP5,118,904	
N14	USP5,120,578	
N15	USP5,122,893	
N16	USP5,124,885	
N17	USP5,125,849	
N18	USP5,127,071	
N19	USP5,132,871	

Ref	Title	Distinction between reference(s) and claim(s)
O1	USP5,134,677	O1 through O17 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
O2	USP5,134,679	
O3	USP5,136,063	
O4	USP5,136,152	
O5	USP5,136,603	
O6	USP5,138,537	
O7	USP5,138,678	
O8	USP5,140,663	
O9	USP5,155,786	
O10	USP5,157,769	
O11	USP5,167,139	
O12	USP5,168,537	
O13	USP5,170,146	
O14	USP5,171,167	
O15	USP5,173,059	
O16	USP5,183,404	
O17	USP5,183,405	

Ref	Title	Distinction between reference(s) and claim(s)
P1	USP5,195,911	P1 through P17 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
P2	USP5,202,536	
P3	USP5,207,597	
P4	USP5,212,752	
P5	USP5,212,754	
P6	USP5,218,519	
P7	USP5,225,760	
P8	USP5,233,676	
P9	USP5,233,674	
P10	USP5,234,353	
P11	USP5,238,426	
P12	USP5,241,614	
P13	USP5,247,532	
P14	USP5,259,052	
P15	USP5,259,054	
P16	USP5,262,923	
P17	USP5,271,079	

Ref	Title	Distinction between reference(s) and claim(s)
Q1	USP5,274,729	Q1 through Q16 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection
Q2	USP5,285,466	
Q3	USP5,285,511	

Q4	USP5,285,512	formed in a photo diode cavity.
Q5	USP5,286,207	
Q6	USP5,286,247	
Q7	USP5,288,247	
Q8	USP5,289,347	
Q9	USP5,296,813	
Q10	USP5,299,089	
Q11	USP5,304,069	
Q12	USP5,305,182	
Q13	USP5,311,408	
Q14	USP5,315,679	
Q15	USP5,317,663	
Q16	USP5,321,819	

Ref	Title	Distinction between reference(s) and claim(s)
R1	USP5,329,604	R1 through R16 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
R2	USP5,333,221	
R3	USP5,333,225	
R4	USP5,337,391	
R5	USP5,337,396	
R6	USP5,340,340	
R7	USP5,345,524	
R8	USP5,345,530	
R9	USP5,353,364	
R10	USP5,353,634	
R11	USP5,356,300	
R12	USP5,357,402	
R13	USP5,361,244	
R14	USP5,361,318	
R15	USP5,366,664	
R16	USP5,372,515	

Ref	Title	Distinction between reference(s) and claim(s)
S1	USP5,375,040	S1 through S16 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
S2	USP5,383,793	
S3	USP5,388,995	
S4	USP5,390,268	
S5	USP5,393,249	
S6	USP5,397,242	
S7	USP5,398,154	
S8	USP5,398,295	
S9	USP5,408,384	
S10	USP5,414,787	

S11	USP5,416,668	
S12	USP5,416,870	
S13	USP5,416,872	
S14	USP5,419,717	
S15	USP5,424,573	
S16	USP5,428,703	

Ref	Title	Distinction between reference(s) and claim(s)
T1	USP5,428,704	T1 through T4 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
T2	USP5,434,747	
T3	USP5,443,390	
T4	USP5,446,814	
T5	USP5,452,387	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T6	USP5,454,080	T6 through T9 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
T7	USP5,455,703	
T8	USP5,463,532	
T9	USP5,469,332	
T10	USP5,470,257	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T11	USP5,470,259	
T12	USP5,475,734	T12 does not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
T13	USP5,477,418	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
T14	USP5,478,253	
T15	USP5,478,259	T15 and T16 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
T16	USP5,478,260	

Ref	Title	Distinction between reference(s) and claim(s)
U1	USP5,481,634	U1 through U4 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
U2	USP5,482,658	
U3	USP5,487,678	
U4	USP5,491,613	
U5	USP5,491,712	This reference does not qualify as prior art.

		Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U6	USP5,494,747	U6 does not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
U7	USP5,499,311	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U8	USP5,499,312	U8 does not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
U9	USP5,504,657	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U10	USP5,506,921	U10 through U15 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
U11	USP5,506,922	
U12	USP5,507,668	
U13	USP5,526,235	
U14	USP5,527,991	
U15	USP5,534,662	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
U16	USP5,535,296	

Ref	Title	Distinction between reference(s) and claim(s)
V1	USP5,535,364	V1 does not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
V2	USP5,545,845	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V3	USP5,546,281	
V4	USP5,547,385	
V5	USP5,548,641	V5 does not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
V6	USP5,548,677	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25,

		1994, in Japan.
V7	USP5,554,031	V7 through V11 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
V8	USP5,554,037	
V9	USP5,567,167	
V10	USP5,577,064	
V11	USP5,580,269	
V12	USP5,588,850	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
V13	USP5,598,319	V13 through V15 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
V14	USP5,599,595	
V15	USP5,600,470	
V16	USP5,613,860	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.

Ref	Title	Distinction between reference(s) and claim(s)
W1	USP5,629,919	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
W2	USP5,631,998	
W3	USP5,653,596	
W4	USP5,659,459	W4 does not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
W5	USP5,675,428	These references do not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
W6	USP5,687,267	
W7	USP5,717,533	
W8	USP5,724,729	
W9	USP5,726,864	
W10	USP5,734,558	
W11	USP5,736,782	
W12	USP5,747,735	
W13	USP5,767,999	
W14	USP5,779,504	
W15	USP5,797,771	
W16	USP5,836,774	

Ref	Title	Distinction between reference(s) and claim(s)
X1	USP5,864,468	These references do not qualify as prior art.

X2	USP5,879,173	Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
X3	DE.4239124 A1	X3 through X21 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
X4	EP 0 232792 A1	
X5	EP.0 228 278	
X6	EP.0 305112 A2	
X7	EP.0 314 651 A2	
X8	EP.0 413 489 A2	
X9	EP.0 437 161 A2	
X10	EP.0 456 298 B1	
X11	EP.0 530 791 A2	
X12	EP.0 535 473 A1	
X13	EP.0 588 014 A2	
X14	EP.0 600 645 A1	
X15	EP.0 613 032 A2	
X16	EP.0 652 696 A1	
X17	EP.0 656 696 A1	
X18	EP.0 662 259 B1	
X19	EP.442 608 A2	
X20	WO 94/12900	
X21	JP.1-237783	

Ref	Title	Distinction between reference(s) and claim(s)
Y1	JP.2-151084	Y1 through Y19 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
Y2	JP.2-181710	
Y3	JP.2-278212	
Y4	JP.2-87837	
Y5	JP.3-20458	
Y6	JP.3-94869	
Y7	JP.4-109593	
Y8	JP.4-122905	
Y9	JP.4-165312	
Y10	JP.4-211208	
Y11	JP.4-221207	
Y12	JP.4-229962	
Y13	JP.4-230978	
Y14	JP.4-234715	
Y15	JP.4-270305	
Y16	JP.4-50901	
Y17	JP.4-87809	
Y18	JP.5-052802	
Y19	JP.5-134147	

Ref	Title	Distinction between reference(s) and claim(s)
Z1	JP.5-152607	Z1 through Z19 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
Z2	JP.5-188250	
Z3	JP.5-211379	
Z4	JP.5-218581	
Z5	JP.5-290913	
Z6	JP.5-70955	
Z7	JP.61-158046	
Z8	JP.61-188385	
Z9	JP.63-009325	
Z10	JP.63-16496	
Z11	JP.63-65967	
Z12	JP.63-65978	
Z13	JP.63-82998	
Z14	U-3-20458	
Z15	U-3-94869	
Z16	U-4-87809	
Z17	U-5-052802	
Z18	U-5-70955	
Z19	U-61-158046	

Ref	Title	Distinction between reference(s) and claim(s)
AA1	U-61-188385	AA1 through AA5 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
AA2	U-63-16496	
AA3	U-63-65967	
AA4	U-63-65978	
AA5	U-63-82998	

Ref	Title	Distinction between reference(s) and claim(s)
BB1	AT&T Microelectronics, "1408-Type ODL Transceiver"Feb. 1994 preliminary data sheet.p.2-10	BB1 through BB11 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
BB2	Ronald LSoderstrom et al., "An optical Date Link using a CD laser", SPIE Vol.1577 High Speed Fiber Networks and Channels,pp.163-173,1991	
BB3	BCP,Inc."Gigabits Over Multimode Optical Fiber"no date	
BB4	Ronald L.Soderstrom et al., "CD laser optical Date Links for Workstation and Midrange Computers", IEEE p.505-509,1993.	
BB5	FDDI Low-Cost Fiber Physiscal Layer Medium Dependent (LCF-PMD) Common Receiver Footprint,no date.	
BB6	HP Module HFBR-5103, FDDI Data Sheet,http://www.hp.com/HP-COMP/fiber/hfbr5103.html,Jun.11,1998	
BB7	IBM Technical Disclosure Bulletin "Optical Link Card Guide/Retention System", www.patents.ibm.com/tdbs/tdb?&order=93A+60964, April 1993	



BB8	IBM, "A Proposal for a New High Performance... "OptoElectronics Enterprise Oct.1992 ANSI Meeting,Oct.13,1992	
BB9	IBM, et al,"GLM Family",FCSI-301-Ren Sun, GLM, ,,,,,, FCSI-301-Rev1.0, Feb. 16, 1994.	
BB10	Methode Electronics, Inc., "DM 1063-DBLM9 Copper Gigabit Link Module" data sheet.(no date)	
BB11	"Raylan Joins Low-Wavelength Push -850 nm Transceiver",Electronic Engineering Times,Aug.1993.	

Ref	Title	Distinction between reference(s) and claim(s)
CC1	Sumitomo Electric Fiber Optics Corp. "Transceiver Manufacturers to Support Common Footprint for Desktop FDDI Applications," June 23, 1992.	CC1 does not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
CC2	Sun Microsystems computer Co. et al., Gigabit Interface Converter (GBIC), Rev 4.4, Dec. 1, 1997	This reference does not qualify as prior art. Applicants have claimed priority to Japanese Application No. 06-086691, filed on April 25, 1994, in Japan.
CC3	Siemens, "Who provides Low-Cost Transceivers for all Standards?" no date.	CC3 through CC11 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
CC4	AMP "PC Board Connectors", Product Guide 82759, pp. 7104-7108, Catalog E2750 issued Jun. 1991	
CC5	AMP Inc. "Lytel Molded-Optronic SC Duplex Transceiver" Catalog 65922,Dec.1993.	
CC6	AMPHENOL Engineering News vol. 7 No. 6. , pp241, 264-65, Nov. 1994	
CC7	Baldwin and Kellerman, "Fiber Optic Module Interface Attachment" Research disclosure,Kenneth Mason Publications Ltd.,England,Apr. 1991.	
CC8	Block and Gaio "Optical Link Card guide/Retention Sys" RESEARCH DISCLOSURE Kenneth Mason Publications Ltd.,England,Apr. 1993.	
CC9	Cinch Hinge Connectors Catalog CM-16, Jul. 1963.	
CC10	Martin H. Weik,"Communication Standard Dictionary"p.454.definition of LED,Van Nostrand Reinhold Co.	
CC11	Edward R.Salmon,Encapsulation of Electronic Devices and Components,Marcel Dekker Inc.,New York,1987	

Ref	Title	Distinction between reference(s) and claim(s)
DD1	Dieter Gwinner,Conductive Coatings:Vacuum Evaporated Aluminum for Selective Shielding of Plastic Housings,no date.	DD1 through DD11 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
DD2	HEADS Up--Sumitomo Electric Lightwave joins Other in Announcement,May 11,1995	
DD3	Robert C. Herron,High Density Input/Output Connector Systems,3M Electronic Products Divisions,1990	
DD4	Shortwave Opto Assembly,IBM OptoElectronic Enterprises; IBM/OEE Market Survey Only, Rev.1,Jan.6,1993	
DD5	"Minimizing Electrostatic Discharge Damage to a Cartridge",IBM Technical Disclosure Bulletin, vol. 29 No. 10. Mar.,1987	
DD6	Japanese Standards Association " F04 Type Connectors for Optical Fiber Cords JIS C 5973"Japanese Standards Association,1990.	

DD7	Ronald LSoderstrom et al.,A Miniaturized Fiber Optic Laser Receptacle Using a Compact Disk(CD)··· FOC/LAN'87&MFOC-WEST,pp.383-385,no date.	
DD8	"Transceiver Module Assembly", IBM Technical Disclosure Bulletin,Oct.1979,https://www.delphion.com/tbds/tdb?o=79A+06370,last visited Mar.3,2005.	
DD9	Ronald L.Soderstrom et al.,Optical Components and Electronic Packaging for High Performance Optical Data Links,THE RESEARCH INVESTMENT,p.19-28(no date).	
DD10	Thomas & Betts INFO-LAN Modem 1998	
DD11	"Active component manufacturers lower the cost of fiber to the desktop",Lightwave,Feb.1994 pp.58,67.	

Ref	Title	Distinction between reference(s) and claim(s)
EE1	Fibre Distributed Data Interface(FDDI)-Token Ring Low-Cost Fibre Physical Layer Medium Dependent (LCF-PMD),American National Standards Institute,1996.	EE1 through EE11 do not disclose, at least, a module cap comprising a laser diode projection formed in a laser diode cavity and a photo diode projection formed in a photo diode cavity.
EE2	Communications Standard Dictionary, p.454,definition of inhomogeneous fiber,Van Nostrand Reinhold Publishing,1983	
EE3	"Transmitter/receiver assembly simplifies use of fibre optics", Design Engineering,p.19,Button Press,Ltd.,April 1980.	
EE4	Ronald L.Soderstrom et al., "CD laser as a fiber optic source for computer data links",Fiber Optic Datacom and Computer Networks,SPIE-The International Society for Optical Engineerings,Vol.1577,pp.174-181,1988	
EE5	David A.Knodel et al., "Open Fibre Control,a laser safety interlock technique",High-Speed Fiber Networks and Channels,SPIE-The International Society for Optical Engineering Proceedings,Vol.991,pp.179-182,1992	
EE6	"IBM Technical Disclosure Bulletin, Electrostatic Dissipative Enclosed Connector", Vol.34,No.7B,Dec.1991	
EE7	"High Reliability SW Laser For Optical Data Links", LEOS '93 Conference Proceedings, IEEE Lasers and Electro-Optics Society 1993 Annual Meeting;	
EE8	Minimizing Electrostatic Discharge to a Cartridge,IBM Technical Disclosure Bulletin,March 1987,https://www.delphion.com/tdb?o=87A%2060509 ,last visited Mar.8,2005.	
EE9	K.P.Jackson et al., "High-Density, Array, Optical Interconnects for Multi-Chip Module Conference MCMC-92 Proceedings,IEEE Computer Society Press.	
EE10	TDB:Stackable Circuit Card Packaging within a Logic Cage,IBM Technical Disclosure Bulletin,Dec.1992,https://www.delphion.com/tbds/tdb?o=92A%2063485,last visited Mar.8,2005	
EE11	Jeff Hechi,The Laser Guidebook,2nd ed.,McGraw Hill,Inc.,1992	

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